FINAL REPORT

SOCIOECONOMIC MODELS ENHANCEMENT

Maricopa Association of Governments
1820 West Washington Street
Phoenix, AZ 85007

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Socioeconomic Models Enhancement

Prepared for:

Maricopa Association of Governments
1820 West Washington Street
Phoenix, Arizona 85007

Prepared by:

ES *Economic Strategies Group*

2702 North 44th Street, Suite 102A
Phoenix, Arizona 85008
(602) 957-8071

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I. INTRODUCTION

This chapter introduces the work performed by Economic Strategies Group, and its sub-contractors, for the MAG Socioeconomic Models Enhancement Project. The project was performed over a 15-month period from November, 1992 through January, 1994. Most of the data collection was performed during the first half of 1993, and thus the databases should be assumed to be current as of that time period.

The scope of work for the project included nine tasks ranging from background research, to the development of databases, to the creation of projection methodologies. In all, the goal of the project was to develop information and methodologies that could be used to supplement MAG's socioeconomic modeling process. This includes both estimates of current conditions, as well as projections of future conditions.

The sections that follow briefly describe the work performed for each task. These descriptions include the goals of each task, a guide to the documentation for each task, and a listing of the products developed. MAG member agencies were given an opportunity to review the data produced for this project.

Task 1: Refine the Scope of Work

The project was of sufficient size and scope that it was necessary to finalize certain elements of the work scope as the beginning task of the project. This task resulted in the scope of work described below.

Task 2: Background Information

The purpose of this task was two fold. The first goal was to review recent legislation that may have an impact on the methodologies used by MAG to perform socioeconomic estimates and projections. The second goal was to research alternative methods for performing some of the other tasks of the Socioeconomic Models Enhancement project. Specifically, research was performed on methods of estimating and projecting employment, and methods for estimating and projecting special populations. This research is documented in Chapter II of this report.

Task 3: Geographic Boundaries

This task contained two primary work items. The first was to recommend and implement changes in Traffic Analysis Zone (TAZ) boundaries to be consistent with Census geography, particularly at the Census Tract level. The second, work item was to profile existing and potential development in each of the 141 Regional Analysis Zones (RAZs). These work items are documented in Chapter III of this report. This task resulted in four specific data/model related products including:

- Revised TAZ boundary file in Arc/Info format;

- A Census Block to TAZ correlation file;

- A revised TAZ to RAZ correlation file; and

- A book profiling existing and potential development in each RAZ (available from MAG).

Task 4: County-level Projections

This task focused on deriving county-level projections of non-resident population, resident group quarters population, selected household income characteristics, and selected economic characteristics. The issue is that the County-level projections prepared by the State of Arizona do not contain this detail for socioeconomic variables. Work on each of these variables is described in detail in Chapter IV of this report. In short, ESG prepared projections for five year intervals from 1995 to 2040 of:

- Non-resident population (seasonal and transient);

- Resident group quarters population; and

- Retirement population by income quintile.

ESG also prepared estimates of detailed socioeconomic characteristics for 1990 based on the Census Public-Use Microdata Sample (PUMS). These included:

- Workers per household by income quintal;

- Population per household by income quintal; and

- Unemployment rates by economic sector.

Task 5: Employment Database

As its name suggests, this tasks primary goal was to update and extend the **database of major employers** maintained by MAG for use in its employment estimates. The goal was to include all employers with more than 50 employees at a single site. The database was created by merging employer data purchased from Claritas NPDC, and data collected from other primary and secondary sources, with Trip Reduction and other databases maintained by MAG. The resulting database included nearly half of all employment in Maricopa County.

A secondary goal of this task was to develop a Standardard Industrial Classification (SIC) to MAG-sector (land use) correlation matrix for employment. The problem has been that County-level estimates and projections of employment are reported by industry (through SIC codes), but that small-area estimates and projections must be driven by land use. To develop a correlation matrix, ESG used national employment data from the Bureau of Labor Statistics which cross-tabulates employment by industry and occupation. Using this data, and assumptions about the land uses were persons in a given occupation are likely to work, it was possible to derive an industry to land use correlation matrix (Chapter V, Table V-4).

Both the tasks reviewed above are documented in Chapter V of this report. Products delivered as result of the task included the updated Employment Database, and the SIC-to-MAG sector correlation matrix.

Task 6: Parcel Based Database

The goal of this task was to update MAG's Parcel Based Database. The database contains a record for every parcel of land in Maricopa County as recorded by the Maricopa County Assessor's office. The records include such information as land use, acreage, square footage of commercial buildings, type of residential buildings, and the full cash values of land and improvements. Each parcel in the database is geocoded (identified by its location on a map), which makes this information very useful in preparing small-area estimates and projections.

Many of the parcels were geocoded based on address information provided by the County Assessor. However, for many other parcels it was necessary to locate the parcels based on the book-map containing the particular parcel. This meant that an accurate book-map map had to be created.

Chapter VI of this report documents the process undertaken to update the database, and create the new book-map map. Products produced by the task include the updated Parcel Based database containing nearly 900,000 parcels, and a book-map map transmitted as an Arc/Info boundary file.

Task 7: Special Population Groups

The purpose of this task was to examine alternative methodologies for creating small-area estimates and projections of special population groups. The special population groups involved included the same set for which county-level forecasts were prepared in Task 4 of this project, namely:

- Non-resident seasonal population;
- Non-resident transient population; and
- Resident group quarters population.

It was desired that a method be found to produce estimates and projections of these population groups at the RAZ level of geography. To implement the estimates, ESG performed an inventory of facilities and sites that house people in each of these groups. This inventory was transmitted to MAG as one deliverable of this task.

For projections, the goal was to examine alternative methods for allocating county-level growth in each population group to RAZs. The projections developed, and provided in Chapter VII of this report, are meant as illustrations only. The key product of this part of the task was the examination of how these group may be, and may not be, projected.

Task 8: Other Data Requirements

This task brings together three data collection activities also needed by MAG to enhance its socioeconomic models. First is an update of the Planned and Proposed Development database. This database includes a list of all active (under construction), planned, and proposed large scale development projects in Maricopa County. The list of projects was assembled using information purchased from Canyon Research, provided by the Maricopa County Planning Department, and obtained through published articles and interviews.

The second product of this task focused on redevelopment areas around Maricopa County. This information was obtained directly from city planning departments through interviews conducted by ESG. Information on the area included, and the expected and/or desired land use was obtained.

For both development and redevelopment, the information was coded into a database, and the "footprint" of each project was mapped.

The final item included in Other Data Requirements was an estimate of land values in Maricopa County by book-map area. Full cash value of land information from the Parcel Based database, developed in Task 6, was aggregated to find the total land value in each book-map. These aggregated values were then divided by the total land area of each book-map to estimate average land values per acre.

Chapter VIII of this report documents the process used to create each of the data products listed above, and shows the contents of the databases created.

Task 9: Final Documentation

This task includes all final documentation for the project. This includes working papers for each of Tasks 2 through 8. These working papers provide the most detailed information about the work done for each task, and contain the most printed detail of the results. The task also included creation of this report, and an executive summary of this report, also available from MAG.

Please note that while every effort has been made to provide the most current and accurate information available, MAG, ESG and its subcontractors make no warranty, express or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof. This work is part of the process necessary to support a sophisticated socioeconomic modeling program like MAG's, and by its nature will continue to need updating and refinement.

II. BACKGROUND INFORMATION

1.0 REVIEW OF RECENT LEGISLATIVE SOCIOECONOMIC MODELING IMPLICATIONS — COUNCILS OF GOVERNMENTS SURVEY

Telephone calls to ten selected COG's (Councils of Governments) revealed certain commonalities of approach and opinion while other questions prompted widely divergent responses. Figure 1 summarizes the interviews in a matrix of COG responses to each of seven questions. The COG's contacted included:

- Bay Area (ABAG and MTC)
- Chicago (CATS and NEIPC)
- Dallas (NCTCOG)
- Denver (DRCOG)
- Houston (HGAC)

- Los Angeles (SCAG)
- Minneapolis/St. Paul (TCAG)
- Portland
- San Diego (SANDAG)
- Seattle (PSRC)

There is a consensus about the approach to be taken in response to recent legislation including I.S.T.E.A. and Clean Air Act Amendments. A more comprehensive consideration of land use planning scenarios with transportation options is required. In its simplest form this is a comparison of the present (base year-no build) with some future situation (target year-build). However the base year used by the COG's varies from 1990 to 1993 and the target year ranges from 1996 to 2040.

The DRAM/EMPAL land use planning model is the common vehicle used by most of regions that were contacted. Some COG's have used this model for several years while others, like Houston, have recently acquired it. Greater experience with the model reveals less satisfaction with the output of the model, and regions like Los Angeles and Portland anticipate enhancements to address their concerns. Chicago, Denver and Minneapolis/St. Paul do not use any land use model but employ other routines such as multiple regression analysis, for the same employment and population allocation purposes. In some instances, the basic DRAM/EMPAL model is supplemented by other models or routines.

Interaction or integration with other models is achieved by using the output of the land use model as input to the transportation model. This is common practice. Many regions believed that this iterative process satisfies I.S.T.E.A. and Clean Air Act Amendments objectives. Additional enhancements consist of changes to the transportation model or modifying land use and socioeconomic data input to DRAM/EMPAL with the output of the transportation model.

Suggestions for modifying the land use model include:

- Land cost
- Land availability
- Development costs
- Indicators for amenities
- Housing prices

While transportation adjustments include:

- Vehicle occupancy
- Vehicle ownership
- Modal split
- Trip reduction

A fully integrated land use and transportation process will not be completed in the near-term for most regions. The exceptions are Los Angeles and Portland, which are likely to achieve an integrated process in 1993.

The common review period is every five years. The technical review accounts for two to three years of this timeframe and the policy review for the remaining two years.

In all instances, the regions are given regional or county control figures by their state governments. In five of six regions, employment-driven control projections are used. California uses a process that includes both an economic employment-driven model and also a demographic model using the cohort survival methodology. Adjustments are made to the output. Seattle and Chicago also use an employment-driven forecast. In Portland, the State of Oregon used a population-driven approach in the latest generation of data. The view taken is that such an approach is more relevant in this region because of the high level of in-migration from California and national trends toward an aging population structure.

Most regions felt that their current planning process adequately addresses the requirement of developing land use scenarios for alternative transportation options.

In order to develop land use scenarios, most regions use a fairly standard planning process. Alternatives are developed based on various growth assumptions arising from the agency's analysis of growth, change and trends in the study area. Typically, the base year is the current or near-current year and is then used as the no-build (or do-nothing) situation.

These land use alternatives are then projected forward in a single or series of project phases to the end or target date of the study. The timeframe varies from city to city. The target date is the build scenario. The implications are then reviewed as to economic impact, and the socioeconomic implications and weighed against the regional/agency goals and policies.

In essence, there is no firm rule as to the approach to be taken. Most of the respondents follow the same or similar approach that incorporates ISTEA factors, although they vary as to the details of base year and target year. The major departure from standard planning process is the emphasis on transportation issues to be studied as an integral part of the whole.

LIST OF SOURCES

LOCATION	ORGANIZATION	NAME AND POSITION
Bay Area	ABAG[1]	Janet MacBride, Land Use Planner
		Ray Brady, Planner, Planning Services
	MTC[2]	Therese MacMillan, Senior Planner
		Sherri Rogelburg, Associate Planner
Chicago	NEIPC[3]	John Paige, Director
		Laurie Haringa, Planner
	CATS[4]	Peter Elliot, Director of Work Program
Dallas	NCTCOG[5]	Dan Lamers, Principal Planner
Denver	DRCOG[6]	Larry Mugler
		Jeff May, Transportation Planner
Houston	HGAC[7]	Julio Ituerria, Principal Planner
		Sophie Eberhart, Sr. Transportation Planner
		Jerry Bobo, Planner-Modeling
Los Angeles	SCAG[8]	Terry Bills, Principal Planner-Forecasting & Analysis
Minn/St.Paul	TCAG[9]	Steve Alderson, Trans. Development
		Jim Barton, Senior Trans. Planner
Portland		Mike Hoagland, Sr. Regional Planner
		Sonny Condor, Regional Planner-Modeling
San Diego	SANDAG[10]	
	MTC[11]	Bill Tuomi, Manager Transportation Programming
Seattle	PSRC[12]	Larry Blaine, Sr. Regional Planner

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[1]Association of Bay Area Governments.

[2]Metropolitan Transportation Commission.

[3]Northeast Illinois Planning Council.

[4]Chicago Area Transportation Study.

[5]North Central Texas Council of Governments.

[6]Denver Regional Council of Governments.

[7]Houston Galveston Area Council.

[8]Southern California Association of Governments.

[9]Twin Cities Association of Governments.

[10]San Diego Association of Governments.

[11]Metropolitan Transportation Commission.

[12]Puget Sound Regional Council.

2.0 REFERENCES TO SOCIOECONOMIC MODELING IN LEGISLATION

2.1 INTERMODAL SURFACE TRANSPORTATION ACT (HR 2950)

The following is a list of references to this piece of legislation. In each instance, the section number, sub section, page number is given. These references identify any program, requirement, or cross-reference that may have a land use planning or socioeconomic implication.

2.2   CLEAN AIR ACT AMENDMENTS 1990

The Clean Air Act Amendments (CAAA) were reviewed from the document supplied by Maricopa Association of Governments entitled "Summary of the Clean Air Act Amendments of 1990" dated October 24, 1990.

The Environmental Protection Agency has designated the Maricopa County planning area as a Moderate Non-Attainment Area for Carbon Monoxide and Ozone. As such the CAAA requires that the MPO prepare a State Implementation Plan (SIP) to show how attainment of the national air quality standards are to be met and maintained. Socioeconomic implications arise from the programs incorporated in the SIP, such as the vehicle inspection and maintenance program.

Other requirements of CAAA include:

- An emissions inventory;
- A forecast of vehicle miles travelled if the non-attainment value exceeds 12.7 parts per million (ppm);
- Contingency measures.

In addition, the CAAA directs the EPA to promulgate regulations concerning:

- Extending inspection and maintenance programs with stricter emission controls;
- Use of oxygenated fuels;
- Use of reformulated fuels;
- Withdrawal of leaded fuels for highway use;
- Apply emission control of particulate matter to urban buses that are diesel fueled.

These regulations may have future socioeconomic impacts that may result in increased costs of vehicle ownership, increased demand for public transit and increased cost of public transit.

2.3   FEDERAL IMPLEMENTATION PLAN FOR MARICOPA COUNTY ENVIRONMENTAL PROTECTION AGENCY 40 CFR. BART 52 (FRL-3901-3)

This document contains the Implementation Plan for the non-attainment areas for Carbon Monoxide in Maricopa and Pima Counties. The document was reviewed for socioeconomic implications. The findings are set out below.

PAGE	DESCRIPTION
19	In the review of fifty-five alternative measures for congestion management, one of the criteria used to evaluate alternatives was socioeconomic impact.
43	Cost of the Promulgated Control Measures; EPA estimates that there will be an increase in the price of gasoline.
75	Summary, Results of Candidate (Measure) Screening; potential candidates include:

- More stringent Travel Reduction Program,
- Financial incentives to employees in lieu of parking space,
- Preferential parking for car/van pools,
- Free transit passes to employees,
- Alternative workhours/weeks,
- Telecommuting,
- Teleconferencing,
- Encourage bicycle use,
- Encourage pedestrian travel,
- Conversion of vehicle fleets to alternative fuels,
- Retrofit pre-1975 vehicles with catalytic converters,
- Increase standards, remove exemptions, and expand inspection and maintenance programs statewide.

All of these candidate measures may have land use planning and socioeconomic implications.

3.0 ESTIMATING & PROJECTING SPECIAL POPULATIONS

This section is the result of a review of recent literature and approaches for alternative methodologies, current and past implementations, and data requirements of estimating and projecting special populations. Interviews were conducted with key informants from various government agencies including state governments, councils of government, universities, utilities, and private consultants.

"Special Populations" are defined to include: visitors, seasonal populations, transient populations, and group quarters populations. The purpose of this review is to assess the currently used and accepted approaches as a first step in developing the methodology to be implemented in estimating and projecting special populations in Maricopa County.

Following a brief section on the definition of terms used in this research, the report is divided into two chapters. Chapter 2 presents literature reviews and key informant interviews relative to **County-level** estimates and projections, while Chapter 3 focuses on **sub-county** areas.

Definitions. Generally, visitors who stay at least one night are included in a methodology to estimate temporary residents due to the demand they place on infrastructure and local services. For some research problems, the minimum length of stay for temporary residents may be increased from one night to several weeks or months. It is important to define the

objective of the seasonal resident as job-related or vacation- or retirement-related because of the different impact of these groups have on the local community.[1]

The group definitions used here include:

- **Seasonal Population** - That portion of the nonresident population that resides within the area at certain times of the year for more than two weeks.[2]

- **Transient Population** - That portion of the nonresident population that resides in the area for less than two weeks and who reside in hotel, motel or RV housing units.[3] Persons staying in private homes or apartments may be added to this definition.

  Transient and seasonal populations may also include extraordinary activities like mineral exploration crews, movie film crews, auto test crews, etc.[4] They also usually include tourists, business people, snowbirds, seasonal workers and undocumented persons. Some of the people in the last three categories would be included in group quarters population.

- **Group Quarters Population** - That portion of the resident population that resides in a non-household living quarters such as institutions, congregate care facilities or college dormitories (institutional or non-institutional); Group Quarters are any living arrangement other than households. This includes institutions such as mental hospitals, homes for the aged, prisons, etc., plus other quarters containing 10 or more persons where 9 are unrelated to the person in charge, or where there is no person in charge. Such quarters are most commonly found in sole-purpose facilities, but may also be located in a house or apartment used as a rooming house or occupied on a partnership basis.[5] Homeless persons are also defined by the Census Bureau to be in group quarters.

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[1]Stanley K. Smith, "Toward a Methodology for Estimating Temporary Residents," Journal of the American Statistical Association, June 1989.

[2]Maricopa Association of Governments, "Update of the Population and Socioeconomic Database for Maricopa County, Arizona," December 1989.

[3]Maricopa Association of Governments, "Update of the Population and Socioeconomic Database for Maricopa County, Arizona," December 1989.

[4]Telephone conversation with Lloyd E. Levy, Planning Information Corporation, Denver, CO, November 3, 1992.

[5]Maricopa Association of Governments, "Update of the Population and Socioeconomic Database for Maricopa County, Arizona," December 1989.

3.1 COUNTY LEVEL ESTIMATES & PROJECTIONS

This section provides literature reviews and key informant interviews on the subject of county-level estimates and projections of special populations. Each section analyzes a different component of special population.

3.1.1 Visitors

Planning Information Corp., "Topics in Economic-Demographic Monitoring," July 13,1992.

In this article an attempt was made to incorporate current data into techniques of visitor counts for Nye County, Nevada. The primary data included motor vehicle traffic statistics and lodging tax revenues. Vehicles are counted by the Nevada Department of Transportation (NDOT) and the results are converted to a consistent measure of year-round traffic volume called average daily traffic (ADT). NDOT conducts occupancy studies at various points in the state and calculates average occupancy levels for types of roads and classes of vehicles. NDOT also takes count of the ratio of trucks to passenger vehicles and of in-state to out-of-state licenses. NDOT statistics can be used to estimate the number of occupants in out-of-state vehicles, a number which may be used as a proxy for the number of tourist travelers on Nye County roads. This estimate includes tourist travelers in personal vehicles and excludes tourist travelers on commercial and tour buses.

Origin and Destination (O&D) studies reveal where people are going and other trip characteristics, information which adds dimension to the ADT and occupancy data. The studies contact traffic in one or both directions, at one or a number of sites, surveying all vehicles and distinguishing among trucks, RVs and passenger cars. A survey which includes trip origin and destination, number of passengers, and planned length of stay is answered by all motorists.

Lodging tax revenue records provide another basic source about visitors who stay overnight. The basic state lodging tax rate can be used as a generally reliable indicator of lodging revenues at motels and RV parks. The gross revenue is estimated by dividing reported tax revenues by the tax rate to arrive at gross revenue. Therefore Nye County is able to estimate the average revenue per room/RV night by dividing estimated revenue by an average room rate or space rental factor. If the average number of persons staying in a room/RV space per night is determined through further survey, the number of visitors using overnight accommodations may be estimated.

Behavior Research Center, "Metro Phoenix Visitor Study, Topline Summary for 2nd Reporting Period: May - July 1992," August, 1992.

This Metro Phoenix Visitor Study includes intercept interviews conducted with Metro Phoenix visitors at Sky Harbor International Airport, a varied cross-section of area attractions and lodging facilities, and also include telephone interviews conducted with out of area residents who requested tourism information from Valley visitor bureaus.

- The intercept surveys at Sky Harbor and selected areas included many visitor demographics: age, income, place of residence, travel party

configuration, percent of party by age group, length of stay, accommodation by category, travel mode, communities visited, past and future visitation habits, and reason for current visit.

- The phone interviews with people requesting tourist information contained much the same data for persons who had visited the area or who were planning to visit the area.

This report, one of four quarters to be surveyed, should provide good base data for estimating business and pleasure travelers who do not stay in private homes.

Stanley Smith, "Toward a Methodology for Estimating Temporary Residents," Journal of the American Statistical Association, June, 1989.

Smith delineates a method of using number of visitors multiplied by average length of stay to estimate "visitor days." Smith also states that dividing the visitor days by a factor of 365 will yield "visitor years," a measure that can be used to combine estimates for temporary and permanent residents.

Some residents come to an area for production purposes (jobs), and others come for consumption purposes (vacation). The distinction between the two is very important because the impacts of the user groups will differ considerably. In this model there are four distinct types of temporary residents: daytime production (commuters), daytime consumption, overnight production, and overnight consumption.

The major source of data on daytime commuters is the decennial census of the United States, Census of Population and Housing. This census collects journey-to-work data for all commuters working outside their metro areas. The main drawback of this data is the collection period of once every ten years.

Overnight visitors can be tracked by total sales tax or sales tax collected from commercial lodging facilities. The latter measure only estimates the number of temporary residents in hotels and motels, not permanent housing. However sales tax can be used to measure all types of seasonal populations. Sales tax data is adjusted to account for economic conditions and growth in permanent population. Using the lowest adjusted month as a baseline, and assuming that there are no visitors at that time, it can be compared to the highest month. This comparison will yield the sales tax increases due to visitation by temporary residents. Using an average expenditure per visitor per day the number of visitor days can be estimated. Converting the visitor days to visitor years will estimate a transient population. The major drawback to this method is the inability to differentiate between the day and night seasonal populations, the assumption that no visitors are present in the lowest adjusted month, and the averages which must be used to derive visitor days and years.

Key Informant Interview: Lin Zane, Director of the Hawaii State Department of Business, October 17, 1992.

The state of Hawaii provides a questionnaire to all persons on airline flights with a destination to one of the islands. This questionnaire is used to determine length of stay, places people will visit, expenditures while visiting, type of lodging, etc. Lin Zane stated that

this survey works well for Hawaii because of geographical reasons, but would miss many people entering an area such as Maricopa County.

3.1.2 Seasonal Populations

<u>Key Informant Interview: Steve Murdock, State Data Center at Texas A&M University, October 28, 1992.</u>

To estimate the "snowbird" population, month to month changes in utilities may prove useful. Information on whether the snowbirds disconnect their utilities and on household size may be obtained by a telephone survey targeting key telephone exchanges provided from the telephone company. Also, legislation regarding such areas as homestead tax exemptions, which usually have a six-month residency requirement, may be useful. However, in Arizona homestead exemption (a form of property tax credit) is restricted to widows, widowers, and the disabled, and is not, therefore, useful for MAG's purposes.

<u>T. Hogan and S. Happel, "1991-92 Winter Residents Help Sustain AZ Economy," Arizona Business, June, 1992.</u>

This article describes the outcome of a series of questionnaires that were mailed to owners and managers of RV/travel trailer/mobile home parks in an eleven county study area in Arizona. The questionnaires asked about numbers of mobile homes, travel trailer, and RV spaces, occupancy rates, and number of winter residents in the first week of February 1992. Occupancy rates and winter resident proportions were calculated from the information supplied by responding parks. For the non-responding parks, counts of the number of mobile home and travel trailer/RV spaces from the survey's data base were combined with the computed ratios to estimate occupancy rates and proportions of spaces occupied by winter residents of the non-responding parks. An average of two persons per vehicle was assumed, as shown in past research. These imputed data were than merged with the census information to produce estimates of the numbers of winter residents living in mobile home/travel trailer/RV parks during the first week of February 1992.

Surveys of parks conducted during the past two winter seasons by the Center for Business Research discovered that approximately 60% of the seasonal population were living in mobile homes/travel trailers/RV's. Also, information from the ASU park survey is available on a valleywide basis for each season since 1985-86, making it possible to examine trends relating to the area's winter seasonal population.

These data can be used to make base year estimates of seasonal population in RV/travel trailer and mobile homes in Maricopa County.

<u>Maricopa Association of Governments, "Household Survey of Metro Phoenix," August, 1988.</u>

The Household Survey of Metro Phoenix contains the results of a phone survey of households in metropolitan Phoenix with the purpose of obtaining statistically valid values for household size by type of residential dwelling unit.

The values for household size are used to establish total population for Maricopa County and the geographic sub-regions used by the Maricopa Association of Governments for

transportation modeling and planning. A secondary purpose of the survey was to obtain demographic characteristics such as winter visitors in private homes to estimate variables in the 1988-89 Population and Socioeconomic Database Update Study.

The survey defined a seasonal resident as a visitor staying for more than two weeks during the winter tourists winter season: the period between September 1, 1987 and May 1, 1988. The survey included the estimated number of seasonal residents living in private homes in Maricopa County during the 1987-88 winter season. The survey also included the length of stay, the number of visitor weeks spent in private homes, and seasonal population equivalent of the visitors added to the County during the visiting season.

Planning Information Corp., "Topics in Economic-Demographic Monitoring" July 13, 1992
Pahrump, Nevada was the location for a survey which estimated "snowbird" population characteristics, including age, season to visit, duration of stay, where expenditures were made, and activities of the snowbirds.

The definition of a snowbird for this study is a person who, because of colder weather elsewhere, migrates from their usual place of residence to Nye County (Pahrump, Nevada) for three months or longer. The study assumed that snowbirds stay in one of five types of places: 1) RV or travel trailer parked in a commercial park, 2) RV or travel trailer parked on a private lot, 3) permanent housing (apartment, home, etc.), 4) a motel unit, 5) the residence of friends or family.

The number of snowbirds in RV's were determined by counting the RV's on private and commercial lots and multiplying by two persons per RV. The survey assumes that the snowbird population staying in motels is about 15% to 20% of the RV population. The survey did not address snowbirds in their own homes or staying with friends or relatives.

The survey determined that the visiting season started in the end of September and ended around the end of April. Some of the reasons given for the end of the season were the April 15th deadline for income tax filing and a return to warmer weather in the original place of residence.

John Semmens, "Possible Methods for Measuring Seasonal Population," Memo Presented to the Arizona State Population Technical Advisory Committee (POPTAC) on June 4, 1990.

The memo outlines many sources of data that could be used to estimate seasonal populations. Indicators such as consumption levels of basic goods, water usage, electric usage, and food consumption may all be used to measure populations.

Using water usage as an indicator of population size would require measuring the water use for a sampling of households to determine average water use per household or per capita. The average usage level could then be applied to total water consumption at several points during the study year to estimate seasonal population. There would have to be controls to account for changes in weather. Electricity usage could be tracked in much the same way.

Food consumption could be another measure to estimate population size. Milk was suggested as a food which could provide a suitable proxy for population size. To determine a base measure for gallons of milk per person it is necessary to start with a year where resident population is known. This base year is then applied to milk consumption figures for future years to determine population size. The main drawbacks of milk as a measure

are price fluctuations and changes in age structure that could affect the overall rate of consumption per capita over time.

<u>Coopers and Lybrand Report to Maricopa Association of Governments for the Department of Water Resources, "Literature Search and Data Collection for Nonresident Population," January 31, 1991.</u>

Prior to 1989 the Department of Water Resources used a methodology based on vacant units and "zero delivery months" to determine seasonally adjusted population. The total full-time equivalent number of vacant units is calculated separately for single family and multi family housing units. The total number of vacant months is calculated based on a survey by the water service provider. The number of vacant months is used to calculate average vacant units. Average annual single family vacant units can be divided by total single family units to determine the vacancy rate.

The total number of zero delivery months is then calculated from billing records. Delivery of less than 748 gallons of water to a single family unit or other detached housing unit with outdoor landscaping is defined as a "zero delivery month." Zero delivery months were then converted into average annual zero deliveries. The number of vacant units based on the survey is compared to the number of vacant units based on zero deliveries to determine true vacancy rate. If the number of vacant units based on zero deliveries is significantly different than the survey amount, indicating a large seasonal population, zero delivery months are used to calculate the final vacancy rate.

The vacancy rate for multifamily units is calculated based on a survey sample from apartment managers in the water service area. The annual average vacancy rate for multifamily units by water service area is also calculated based on housing market research from an outside source. The most credible vacancy rate of the two is multiplied by the total number of multifamily units to determine the number of vacant units on an FTE basis. The population per housing unit measures are applied separately to the number of occupied single and multifamily to determine the total service area population. For single family units, a full time equivalent number of vacant units is calculated based on the number of vacant unit months. The number of vacant unit months is determined using the method indicating the larger seasonal population of the following methods: a survey by the water service provider and by the number of unit months with water usage of less than 748 gallons or "zero delivery." All water service providers have data available on water usage by meter month. Because standards of usage vary greatly between communities it is possible to utilize data from the water service providers to estimate seasonal populations, as long as each community is analyzed individually.

<u>Timothy Hogan, "Determinants of the Seasonal Migration of the Elderly to Sunbelt States, Research on Aging," March, 1987.</u>

This article presents a regression that attempts to estimate seasonal population using independent variables that include population over 65 in origin state, distance from the destination state, income in the origin state, climate of the destination state, relative cost of living in destination state, and a dummy variable for migration from east/west states. The statistically significant variables of the Arizona model include January temperature differential, the size of the elderly population, and income level in the origin state, and the east/west dummy variable. The dummy variable is used to account for the negative correlation associated with certain eastern states migrating to Florida, not Arizona. When

the east/west dummy variable is removed from the model distance to Arizona from the origin state showed strong negative correlation to total migration.

Ronald Gunderson, "A Method for Estimating the Seasonal Population in Rural Regions: A Case Study of Northern Arizona," Economic Development Review, Spring 1989.

A method for measuring seasonal population in a region included sampling procedures to estimate average and peak number of visitors. Seasonal population in this article is defined as visitors who spend at least one night in the areas including: persons who own second homes, persons staying in motels and cabins, persons staying in campgrounds, and attendance at children's summer camps. Visitors staying with friends or relatives are excluded from this study.

If a property is assessed at 10 percent of the market value, indicating residential use, the address of the owner is checked. If the address of the owner is listed outside the county the home is assumed to be a second home. (This methodology may have caused some under counting due to some units being owned by local residents for use as second homes.) Between five and ten percent of the second homes were then surveyed to determine the type of unit, what portion of the year the unit was occupied, whether the home was rented out at any time during the year and how long the resident had owned the property. The total number of second homes was estimated from the survey results.

Key Informant Interview: Bill Lenard, Broward County, Florida, November 2, 1992.

An undercount exists in the number of vacant seasonal or occasionally occupied dwelling units listed in the Census. There are a large number of garages and spare rooms being rented seasonally which are not reported. People hesitate to report these because of zoning or taxation laws. Some of the people counted as seasonal population are actually full-time residents, but they do not want to risk losing their Canadian citizenship or benefits by making this known.

Key Informant Interview: Karen Wolf, Salt River Project, Phoenix, Arizona, November 3, 1992; May, 5, 1993.

In the latter part of 1992, Salt River Project (SRP) conducted research to determine if seasonal visitors typically leave on or disconnect their service in the summer. However, SRP has instituted a program where seasonal residents can have utilities placed on inactive status without actually being disconnected. For this reason, it is difficult to separate and measure activity of winter visitor accounts.

3.1.3   Transient Populations

Key Informant Interview: David Taylor, Planning Coordinator for the City of Tucson-Advanced Planning Division, October 28, 1992.

Part of the homeless population may be classified as either transient or seasonal. Homebase, an advocacy group for the homeless may be able to provide estimates. The City of Tucson, Arizona estimates that for every bed available in a shelter during the winter

season, there are two more homeless people living in alleys, washes, etc. Because the homeless have such a wide variety of demographic characteristics, this may be the only way to count them. This suggests that interviews with homeless providers in Maricopa County may be a possible methodology for estimating the number of base year homeless.

3.1.4 Group Quarters Populations

Key Informant Interview: Dan Shay, Demographic Research Unit for the California Department of Finance, October 27, 1992.

In California, group quarters are surveyed by the state, which keeps a list of names and addresses. They use the most recent census as a bench mark and ask local jurisdictions to survey the facilities and list changes. The state is responsible for surveying the federal facilities.

Key Informant Interview: Jim Westcott, Department of Local Affairs, Colorado Division of Local Governments, October 27, 1992.

Only a portion of college students live in group quarters or dormitories. Students over 25 years, who may be permanent residents, should be distinguished from groups that come into the university town and stay for two to four years and then leave. This definition by the State of Colorado does not appear to match the U.S. Census Bureau definition of "seasonal" population. For the Census Bureau, college students are included as part of the "resident" population and are distinguished to be group quarters population if they live in dormitories.

Similar counties without a university were looked at as a control group for university student age categories. The percent of the total above the control group are considered to be temporary residents. The temporary college population is not added to the permanent population figures, except for those students over 25 years who are actually permanent residents.

Colorado Division of Local Governments, Department of Local Affairs, "Colorado Population Estimates and Projections, 1990-2015," August, 1991.

For several types of group quarters residents (college students, state prison inmates, and military personnel), the size and age-sex composition of these populations are projected separately based on their special characteristics derived from census and other sources. They are not subject to the mortality and fertility schedules as the same cohort component model, nor are they subject to the migration assumptions projected by the econometric model.

3.2 SUBCOUNTY LEVEL ESTIMATES & PROJECTIONS

This section contains literature reviews and key informant interviews on the subject of estimating and projecting special population groups at the subcounty level. This section analyzes a different component of special population.

3.2.1 Visitors

<u>City of Scottsdale, Office of Economic Development, "The Scottsdale/Paradise Valley Tourism Study, Part 2: Visitor Statistics," January, 1992.</u>

There are four resort "cores" with services and amenities geared for the short term business visitor, the conference and convention visitor, large business groups, and independent leisure travelers.

The first step is to determine the total number of visitors and visitor nights by category. The total number of rooms in each subarea (City of Scottsdale, Town of Paradise Valley, and the areas within the market area) is multiplied by 365 days per year and the average annual occupancy rate to determine the total number of room nights that are occupied. To determine the total number of visitors the number of occupied room nights are multiplied by the average number of persons per room to arrive at a figure for total visitor nights (one visitor night equals one person staying one night). There is no accurate way to measure day visitors. This study took the total estimate for visitors to Metro Phoenix, subtracted out the total number of hotel, seasonal, and houseguest visitors to the Scottsdale/Paradise Valley market area and assumed that out of the remaining balance that Scottsdale captures 40% as day visitors. The figure for total number of seasonal visitors and houseguests was taken from Larking Marketing and Research "The Scope and Impact of The Scottsdale AZ Seasonal Resident," May, 1985, and updated by 4% annually to reflect 1992 counts.

<u>The City of Key West Comprehensive Plan, "Population Estimates and Projections," November, 1991.</u>

For purposes of the study, visitors are defined as people who visit Key West for periods of less than three months at hotels, guest houses, boarding houses or campgrounds, rental homes or condominiums, or stay with friends and relatives.

For the first phase of the estimates, the number of overnight tourists lodging at hotel/motels was calculated. The formula used to calculate the number of overnight tourists lodging in hotel/motel accommodations was: (# hotel/motel units) X (# persons per party) X (% occupancy rate). Information on hotel/motel units was obtained from the City of Key West. The Department of Commerce, Division of Tourism Visitor Profile provided information on the average party size of visitors and hotel/motel occupancy rates.

For the second phase of calculating the overnight visitor population, the ratio of overnight tourists who actually lodge at a given hotel/motel to the total lodging accommodations actually used was recorded. The number of overnight tourists who lodged at a given hotel/ motel on any one day (answer to phase one above) was divided by the percentage of overnight tourists that actually lodge at hotel/motel accommodations in order to determine the total estimated tourist population on any one day.

3.2.2   Seasonal

Metro-Dade Planning Department, "Dade County Florida, Seasonal Population," October, 1987.

The planning department in Dade County produces annual estimates of seasonal population by subarea. The seasonal population includes any person who stays at least one night in the county and includes: seasonal residents who occupy a previously vacant housing unit, visitors in hotels and motels, and visitors who stay with friends or relatives.

A number of different factors were considered as indicators of the size of the seasonal population including: summaries of residential electric customers, monthly water and sewer volumes, summaries of gasoline sales, monthly garbage pickup volumes, resort and tourist tax collections, and traffic volumes on selected arterials.

The methodology which was used was based on the rise and fall in residential electric usage for customers. A peak occurred in February/March at the height of the tourists season which could be compared to a corresponding drop in electric customers in August/ September. To adjust for undercounting due to seasonally vacant homes where the electricity was left on in the summer, electric customer data was benched to the 1980 Census data on nonresidential homes. The calculation of nonresident households based on the Census included "vacant units held for occasional use," "vacant seasonal units," and "vacant other" units. The adjusted seasonal number was converted to total seasonal population by assuming a 95 percent occupancy rate and an average population per dwelling unit of 2.2 persons.

Susan Krug Fieldman, "Forecasting a Seasonal Population," Business Economics, July, 1988.

A method for estimating trends in seasonal population was based on a case study of Salt River Project customers in Phoenix. The seasonal pattern of residential electric customers was used as a proxy for seasonal residents. The total number of customers in the peak of the tourist season was compared to the low in the summer months, adjusting for growth in permanent housing. The seasonal difference in electric hookups was used as a dependent variable in a regression model. The methodology does not exclude winter only residents who do not disconnect their electricity in the summer. The independent variables which were found to be significant in seasonal migration were population over 65 years, temperature severity, and the Canadian dollar exchange rates.

3.2.3   Group Quarters Population

N. Rives and W. Serow, "Introduction to Applied Demography-Data Sources and Estimation Techniques," 1984.

A count of the number of residents of each group quarters facility in the study area is needed on or about the date of the population estimate. Unless this information is routinely available, the data will have to be collected through inquires. The authors recommend starting with institutions, such as prisons and health facilities, for they are obvious sources and may account for a significant proportion of the group quarters total. Census Bureau regional offices can provide information on boundary locations, as well as determine whether

a particular facility qualifies as a "group quarters" institution under Census Bureau rules. Non-institutional group quarters population includes the population found in college dormitories, military barracks, halfway houses, boarding houses, and communes. The Census Bureau generally limits the category to living quarters occupied by at least ten persons not related to the person who owns or rents the quarters. It is best to begin estimating the size of non-institutional group quarters population by contacting all colleges and universities and military installations within the boundaries of the study area. If trying to contact group quarters facilities does not yield satisfactory results, than the next best approach is to consult the most recent census.

4.0 REVIEW OF RECENT LITERATURE AND APPROACHES FOR ALTERNATIVE METHODS OF ESTIMATING & PROJECTING EMPLOYMENT

4.1 LITERATURE REVIEW

A due diligence effort was made to research recent information on small area estimates and control total projections of employment. There is very little information on either subject; moreover, all articles are quite old (i.e., more than fifteen years). Although there were some recent articles on county-level projections, these dealt with demographic forecasting techniques, not economic forecasting techniques. Based on the literature review, more emphasis was based on obtaining information from direct interviews with other regions.

4.2 KEY EMPLOYMENT INTERVIEWS

Key informant interviews with eight Councils of Governments were conducted to review the development of small area estimates and control total projections of employment. The information collected is presented in the following figures:

(1) Figure II-2 lists the contacts;

(2) Figure II-3 summarizes the approach for small (e.g., traffic analysis zone, regional analysis zone) area estimates; and

(3) Figure II-4 summarizes the frequency and approach for updating control total projections.

FIGURE II-2

COG CONTACT LIST

LOCATION	ORGANIZATION	NAME and POSITION
Bay Area	ABAG	Ray Brady, Planner
Dallas	NCTCOG	Dan Lamers, Planner Lyssa Jenkins, Planner
Denver	DRCOG	Larry Mugler, Planner
Houston	HGAC	Jerry Bobo, Planner
Los Angeles	SCAG	Terry Bills, Principal Planner Bruce Devine, Planner
Minnesota	TCAG	Phil Rutland, Planner Gene Knass, Planner
San Diego	SANDAG	Jeff Tayman, Planner
Seattle	PSRC	Jan Williams, Planner

FIGURE II-3

SMALL AREA EMPLOYMENT ESTIMATION TECHNIQUES BY SELECTED COUNCILS OF GOVERNMENT

QUESTION	BAY AREA	DALLAS	DENVER	HOUSTON
How would you rate your small area employment estimates in an overall sense?	In the broad sense, the model works well; allocation is accurate in historical patterns.	Unsatisfactory, we are still working out a lot of bugs in the data and model.	Good, the model and data are reliable. The model is being updated to incorporate economic indicators.	Functional, but work is being done to correct some problems with high residuals.
Do you have a developed relationship by employment type and land use in your model?	Yes, using county business patterns, a 5-industry breakdown is possible. The resulting patterns are projected out to planned uses.	Not enough past to develop a strong relationship.	Yes, the region is broken down into the 1 digit SIC code by small area use.	Yes, data is available to estimate employment by SIC one digit code. Adjustments are made to model as projection periods increase.
How do you check for accuracy in your data and estimates?	Data sets are updated annually and local governments check ABAG estimates for accuracy.	Data sets are updated every two years. Accuracy is assessed by comparing present figures with forecasted figures on the municipal level.	Data set is updated by DRCOG and the State. Accuracy is not checked yet.	Data is updated by state and HGAC; accuracy is checked by very limited employer surveys.
What is the final or smallest area you estimate to?	Census Tract	Census Tract and/or Zip Code	Census Tract	Census Tract and/or Zip Code

QUESTION	LOS ANGELES	MINNEAPOLIS	SAN DIEGO	SEATTLE
How would you rate your small area employment estimates in an overall sense?	Good, the model is accurate in all current surveys.	Done on an individual basis; overall estimates are compiled from community estimates.	Very good, allocation model is acceptable as residuals are low.	Good, historical patterns fit. Sample surveys show strong conformity.
Do you have a developed relationship by employment type and land use in your model?	Yes, regional figures are allocated on the basis of SIC code employment by dominant land use of small area.	No, regional totals are allocated by cities for their metro area.	Yes, a projected land use model projects employment by planned use. Employment projections are based on interacting models of SIC employment.	Yes, employment control totals are allocated from top down based on 1 digit code; factors are adjusted from year to year.
How do you check for accuracy in your data and estimates?	Data is updated by SCAG as it is received from county. Accuracy is checked by municipalities on individual data collections by the cities.	Data is updated every year and model every 5 years. Accuracy is checked by separate metro areas.	Data is updated yearly based on county business patterns. Attraction factors based on employment projections for land use are adjusted by local governments.	The Putman model is used with 6 SIC codes. This derivative model is augmented with interacting runs that attempt to locate addresses that are reporting employees for different locations.
What is the final or smallest area you estimate to?	Census Tract	Census Tract, or special high density districts, mostly in CBD	Census Tract and/or Zip Code	Census Tract and/or Zip Code

FIGURE II-4

CONTROL TOTAL EMPLOYMENT PROJECTION TECHNIQUES BY SELECTED COUNCILS OF GOVERNMENT

QUESTION	BAY AREA (ABAG)	DALLAS (NCTCOG)	DENVER (DRCOG)	HOUSTON (HGAC)
Who produces the employment projection?	ABAG collects all data and does all projections themselves.	The Regional Data Center within NCTCOG does the projection.	DRCOG does the projections themselves.	HGAC does the projections themselves.
How often are the projections done?	Updated every 2 years.	Have committed to a 3-year schedule.	Approximately every 5 years.	Approximately every 3 years.
How are the projections done? What model and/or methodology is used?	Output drives employment which drives population. The RIS[1] model is used for regional data whereas the CEFS[2] model is used for county data. The input-output model deals with 32 sectors. Equations for the model are developed, based on factors such as land use availability, historical trends, decentralizing industries, shifts, etc. The projections are based on historical data. This historical data is refined through the use and evaluation of expert opinions to pick up shifts within the counties.	A demographic task force is used because local input is considered as important as the model forecasting. Regional control totals from the state comptroller forecasts are used. In these totals, employment does not drive population. These totals are allocated across regions using a model in which employment does drive population. The model deals with 5 sectors: manufacturing, retail, commercial, services and government. Construction is completely outside the model. Employment estimates are based on small area employment (# people in building) and tracking of movement of major employers.	Regional level data is used and then allocated to smaller levels, such as county levels. The Shift Share Model, developed by the Center for Economic Forecasting at Regis University, is used. This is a 20-sector model. Essentially, the national numbers are used in a series of regressions to tie Denver-area employment to the national trend. The model is employment-driven.	Controls are developed by region with an 18-sector model. An expert panel of 20 to 30 people is gathered to discuss "likely" future events. They make an educated guess or preliminary projection to 2020, which is sent out for review. Also, Perryman Growth Rates, National Planning Data, Center for Public Policy Data and trend signals are compared and an average is created. This average, along with the preliminary projection is used to develop control totals. The totals are reviewed by Data Services Committee.

[1]Regional Information System.
[2]County Employment Forecasting System.

FIGURE II-4 (continued)

CONTROL TOTAL EMPLOYMENT PROJECTION TECHNIQUES BY SELECTED COUNCILS OF GOVERNMENT

QUESTION	LOS ANGELES (SCAG)	MINNEAPOLIS (TCAG)	SAN DIEGO (SANDAG)	SEATTLE (PSRC)
Who produces the employment projection?	SCAG works with the Center for Continuing Study of California and UCLA Bureau of Forecasting	TCAG does projection themselves.	SANDAG does projection themselves.	PSRC does projection themselves, but compares numbers with Office of Financial Management
How often are the projections done?	Done in a 3-year cycle (latest 1989)	Approximately every 5 years. Number moves along with long-range planning.	Historically every 3 to 4 years.	Approximately every 2 years.
How are the projections done? What model and/or methodology is used?	Employment drives housing and population. National forecasts from BLS are disaggregated to county level. A forward forecasting method is used. That is, a percent change up or down in employment is constant over time. SCAG does not strictly use historical data. Things specific and important to an area, such as zoning law changes, are considered.	A time series regression approach is taken. National forecasts from BLS and DRI are used in the regression to tie Twin City employment to the national trend. The National Control Total is allocated to 8 sectors as well as 5 rings. These sectors and rings are then allocated to cities. If county data is needed, the data is reaggregated up to the county level. Population forecasting is done separately.	Employment drives population. Migration is determined by employment changes and unemployment forecasts. Cohort components are integrated. A custom developed demographic economic forecasting model is used. Separate economic equations for each employment sector are developed using historical data. The regression takes into account certain factors (national trends, employment, personal income, IO coef.) which are merged into an index. The model has options depending on how the residuals are treated. The model mainly uses 2 digit sectors, but some 3 digit sectors are used for important industries.	Employment drives population. National and regional economic forecasting gives countywide employment numbers. The forecasting model, STEP, is used (Independent documentation received and verified.)

III. GEOGRAPHIC BOUNDARIES

1.0 INTRODUCTION

The purpose of this technical memorandum is to describe the work performed by Economic Strategies Group (ESG) and GIS Southwest in updating geographic boundaries, as specified under Task 3 of the Socioeconomic Models Enhancement Project. This task contains two distinct work items. The first involves updating Traffic Analysis Zone (TAZ) boundaries, and creating new TAZs to achieve greater consistency with Census geography. The second, requires the development of a book profiling each of MAG's Regional Analysis Zones (RAZs).

The two sections of the memo that follow describe the goals, approach, and results of work on each of these distinct parts of the task. However, the primary products of this task are digitized maps, and printed RAZ profiles not included herein.

2.0 TAZ AND RAZ BOUNDARY CHANGES

The reasons for reviewing TAZ boundaries was essentially two fold. It was the desire of MAG to see if TAZ geography could be more closely related to Census geography, facilitating the use of information from both sources; and to prepare for the year 2000 Census by adding and/or revising TAZ boundaries, especially with respect to existing and future transportation system alignments, development boundaries, etc.

Work of preparing new TAZ boundaries consisted of four tasks:

1) Economic Strategies Group reviewed the existing TAZ boundaries as compared to Census Tracts and incorporated area boundaries. The goal of the review was to identify where existing TAZ boundaries would need to change, and new TAZs need to be created, in order to allow TAZs to be equal to, or subsets of, Census Tracts. In the existing system, TAZs boundaries were found to very often span Census Tract boundaries, but sometimes only by a very small amount.

    For example, in some places the TAZ boundary would be at the street centerline, while the Census Tract boundary would run along the edge of the street or be one row of houses back from the street. Sometimes these alignments were necessary to follow jurisdictional limits, and sometimes they were not.

    It was determined that if a new TAZ were to be created in every case where such an instance occurred, the total number of TAZs would be too large, and many TAZs would not meet the criteria of the traffic forecasting models. As a result, a geographic element called a "TAZLETTE (TAZL)" was created. TAZLs are to be maintained by the socioeconomic system to allow for consistency with Census data, but will not become part of the traffic forecasting system.

The review resulted in recommended TAZ boundary changes drawn onto a series of 88 urban, and 6 rural maps submitted to MAG for review.

2)   MAG and MAG TPO staff reviewed the changes recommended by ESG. This review focused on two additional factors to be considered in developing TAZ boundaries. The first was the consistency between TAZs and Census Block-groups. It was felt that where it was easy, TAZ boundaries could be changed to be consistent with this second level (in addition to Census Tracts) of Census geography.

Second, was that existing TAZ boundaries should be changed to better align with major streets, and reflect natural and man-made impedances to travel. In some cases this involved adding new TAZs, while in others it was possible to change the boundaries of existing TAZs to achieve consistency.

3)   Approved changes recommended by ESG, and additional changes recommended/required by MAG staff were transmitted to ESG in two series of maps and documentation as described above. ESG staff reviewed and combined recommended changes into one map "manuscript" to be used by GIS Southwest in creating the new digitized TAZ map. This also included a change in RAZ boundaries requested by the City of Goodyear.

4)   Based on the manuscript of desired changes, GIS Southwest created a new digitized TAZ map using Arc/Info. Wherever possible, changes to the TAZ system were implemented by selecting arcs from the Census Block geography to form the boundaries of new and revised TAZs.

It should be noted that in the process of incorporating the changes and creations included in the manuscript, GIS Southwest staff encountered a number of areas where very small differences between Census Tract and TAZ boundaries existed, but were too small to be seen on the maps used to develop the manuscript. The vast majority of these involved pieces of land too small to support population or employment. In these cases, the goal of making TAZs and Census Tracts coterminous was used as the over-riding factor in determining the new boundary of the TAZ.

The resulting TAZ boundaries were used to create new RAZ boundaries using the same area contained in existing RAZs, with the exception of the Goodyear area where RAZ boundaries were revised.

3.0   RAZ PROFILES

Regional Analysis Zones (RAZ) have been profiled by Economic Strategies Group (ESG) to serve the Maricopa Association of Governments (MAG) as a concise review of existing and projected population and employment, and planned and proposed development within each of MAG's 141 Regional Analysis Zones. The profiles include a statistical survey of population, employment, and land use data. Information on the major employers and major planned area developments for each RAZ is also included. A short text description is provided as a brief overview of the general characteristics of each RAZ and notable physical, economic, or transportation features. The following is a description of the database tables and data components utilized in the profiles.

List of Database Tables:

- GeogArea: ESG TAZ/RAZ/MPA cross-reference table
- Pop_HU93: MAG population and housing estimates and projections
- LndUse93: MAG land use estimates and projections
- Jails/Institutions: ESG correctional and dormitory facilities
- Nursing Homes: ESG nursing home facilities
- Hotels: ESG hotels and motels
- MHP: ESG mobile homes and travel trailers
- MagEmp: ESG major employers
- Planned Developments: ESG planned area developments

Population. Sources for data included in this section are the 1990 Census and MAG's most recently approved projections for population and housing units for the years 2005 and 2020. Subgroups include household and group quarters population, and transient and seasonal population.

Employment. Sources for data included in this section are the 1990 Census and MAG's most recently approved projections for employment for the years 2005 and 2020. Total employment is stratified into Office, Retail, Industrial, Government, and Other employment.

Land Area. MAG is the source for this land use data, expressed in square miles. Total land area is always given, more detailed information is not available in all cases and is noted as "N/A". Detail includes the amount of undevelopable land, and developed and undeveloped land. Developed and undeveloped is further defined as to residential or employment uses.

Group Quarters Population Generators. Sources for this data are tables compiled by Economic Strategies Group. Data is expressed in number of beds. Dormitories are those located at Arizona State University and Grand Canyon College. Nursing homes include intermediate and skilled care facilities, but not home or hospital-based facilities, as is consistent with U.S. Census definitions. Correctional populations includes county, state, and federal correctional facilities.

Transient Population Generators. Sources for this data are tables compiled by Economic Strategies Group. Data is expressed in units for mobile homes and travel trailers, and rooms for hotels. Mobile homes and travel trailers are those located in parks within Maricopa County. Hotels (including motels) are those located within metropolitan Phoenix and Gila Bend.

Major Employers. Source for this information is the major employer table compiled and updated by Economic Strategies Group. In cases where a RAZ contained more than five employers on the table the top five, by number of employees, are listed.

Planned Area Developments. Source for this information is the planned developments table compiled and updated by Economic Strategies Group. In cases where a RAZ contained more than five developments on the table, the top five, by number of acres, are listed.

IV. COUNTY-LEVEL PROJECTIONS

1.0 INTRODUCTION

This working paper and its associated tables have been prepared to address the need for detailed demographic information for certain socioeconomic variables. Specifically, this task is focused on developing county-level projections of resident group quarters population and non-resident population.

This paper includes a description of data collection and analysis efforts, the methodology by which such data was utilized to create a baseline of information and projections of the various population groups and sub-groups, and the resulting tables including 1990 and each of the forecast years from 1995 to 2040 in five-year intervals.

1.1 DEFINITIONS

Group quarters population is a component of resident population as defined by the U.S. Bureau of the Census. This report estimates and projects the levels for each of these types of group quarter population:

- Military bases
- Jails and prisons
- Colleges and Universities
- Nursing homes
- Other group quarters

Non-resident population groups include persons residing in the county on a temporary basis whose primary place of residence is elsewhere. Non-resident population groups contained in this report include:

Transient Populations

- Hotels and motels (Additionally, the hotel/motel component is further categorized as to leisure, business, group related travel, and other transient populations.)

Seasonal Populations

- Mobile home parks
- Recreational vehicle/travel trailer parks
- Seasonal population residing in dwelling types

2.0 GROUP QUARTERS POPULATION

Total projected Group Quarters Population is presented in Table IV-1. These projections are based on the components of group quarters population projected as follows:

Military Bases. There are currently two military bases in Maricopa County: Luke Air Force Base and Williams Air Force Base. The latter is currently being demobilized, which should be completed prior to 1995. Interviews conducted by Harry Wolfe (MAG Transportation Planning Office) at Luke Air Force Base indicate that there are no plans for down-sizing or expansion of housing; if/when additional staffing takes place the housing is expected to be off-base. There are no known plans for any additional military-driven group quarters expansion in Maricopa County. This is consistent with current national trends.

The base military group quarters population was taken from the 1990 Census. The component for Luke Air Force Base was held constant throughout the projection series. The Williams Air Force Base group quarters was held constant, and used from 1990 to 1993 only.

Jails and Prisons. Incarceration facilities include county, state, and one federal institution. City jails were not included as they are used for very short-term purposes, primarily utilized as holding cells prior to transfer to a county or state facility.

The 1990 baseline for jails and prisons was taken from the 1990 Census. Attempting to accurately project future growth of prison populations is extremely complex as such growth is as much or more a function of public opinion, politics, and funding as it is a reflection of the total population. Interviews were conducted with federal (Patty Garret, Federal Corrections Research), state (Daryl Fischer Arizona DOC Research Unit Supervisor), and county (Chief John Coppock, Sheriff's Office) corrections officials. The information received regarding plans for future growth indicated that using a proportion of the total population would be appropriate. The ratio of .399% of the total population was derived from the 1990 Census.

College & Universities. There are currently two institutions with on-campus living facilities in Maricopa County: Grand Canyon University and Arizona State University. There are no plans to build additional housing at Grand Canyon; there are no plans to build housing at the ASU West campus; and there are no plans to build additional housing at the ASU Main campus, which is building-space constricted. While the ultimate usage of Williams Air Force Base is in doubt, the current re-use concepts indicate that its group quarters housing may be used by an academic facility.

The 1990 baseline population in college dormitories was taken from the Census. The estimates for 1993 were obtained directly from representatives of the two institutions listed above. At Grand Canyon College, the representative was Holly Osmus, and at Arizona State University it was Laura Christianson. They said there are no plans for expanding dormitories at these institutions.

While not currently planned, it seems unlikely that no additional facility of higher education will be needed to serve Maricopa County's growing population and house its students. Therefore, the total number of students projected to be housed in group quarters were based on the 1993 share of County population aged 18 to 22 residing in group quarters (3.0785%), applied to DES projections of population in this age cohort (see Table IV-2).

Nursing Homes. Nursing home institutions as included in this report include facilities for skilled and supervisory care as licensed by the state of Arizona Department of Health Services.

The 1990 baseline for the Table IV-1 Nursing Homes column was taken from the 1990 Census. An interview with nursing home representative Jody Brown at Life Care Center of Scottsdale (part of a company operating nine nursing home centers in the metro-area) indicated that the usual resident in such facilities is at least 65 years of age or older (her estimate was 99%, with an average age of 85). This is consistent with Census information for 1990 showing 8659 persons in nursing homes (from STF 1) and 8242 institutionalized persons in group quarters 65 years and over (from STF 3), or 95.18%.

Therefore, projections of nursing home population, as shown in Table IV-3, were based on the percentage of the population aged 65 and over in nursing homes in 1990 compared to the entire population aged 65 and over. This percentage, 3.26%, was then applied to the Department of Economic Security projections of the population aged 65 and over to yield projections of nursing home group quarter population.

Other and Total Group Quarters. Other group quarters components include mental and juvenile institutions, emergency shelters, persons visible in street locations, and other group quarters as defined by the U.S. Census. The chosen methodology assumes that other group quarters will remain a constant percentage of total population as based on the 1990 Census. This percentage is .45%.

Total group quarter population is simply calculated as the sum of the group quarters components described above.

3.0   NON-RESIDENT POPULATIONS

The Maricopa Association of Governments requires an estimate of non-residential population to facilitate transportation, air and water quality planning. For this reason, peak non-residential population has been estimated in order to plan for increased infrastructure capacity. Non-residential population, for the purposes of this study, consists of transient and seasonal components.

3.1   TRANSIENT POPULATION

For this study, a baseline and projections were first derived from information on average occupancy. Peak occupancy rates were then applied to reflect peak conditions. Accordingly, Table IV-4 is in two parts, the upper area showing average hotel occupancy, and the lower area showing peak hotel occupancy. Each segment consists of two main groups, hotel and motel rooms; and persons staying in those rooms. The information on persons in hotel and motel rooms is further divided into sub-groups: Leisure, Group, Business, and Other Visitors.

To create a baseline of information, an inventory of hotel/motel rooms was first compiled with information provided by Kammrath and Associates, with some revisions based on information from local business and general newspapers. This inventory included information on the year the facility was built which allowed inventories for 1985, 1990, and

1992. These establishments were categorized by class (economy — constructed prior to 1970 or with less than 100 rooms; mid-priced — constructed in 1970 or later and with 100 rooms or more; or luxury) and by region (Northwest, North Central, Downtown, Scottsdale area, Camelback corridor, Airport area, Tempe/ASU area, and East Valley), as defined in Figure IV-1.

From market studies by Deloitte & Touche, average occupancy rates for each class and region were determined and then averaged to create an overall average occupancy rate of 59.17% in 1990. From the same source, the occupancy percentage of each sub-group and persons per room was determined to be:

Sub-Group	Occupancy	Persons/Room
Leisure	29.61%	2.0
Group	21.97%	1.35
Business	44.37%	1.0
Other	4.07%	1.5

The 1990 baseline for occupied rooms was determined by multiplying the actual room inventory by the average occupancy rate (59.17%). The 1990 baseline for the Leisure, Group, Business, and Other components was determined by multiplying the number of occupied rooms by the proportion of occupancy and the number of persons per room for each of the components.

Transient population projections throughout the forecast series were based on projecting people in each of the demand components (Leisure, Group, Business, Other). Projected room occupancy was based on the number of people in each component divided by the number of persons per room.

To determine projected room inventory, discussions with hotel industry consultant John Pappas indicated a gradual trend of increased occupancy rates to reach 70% in 2040. Room inventory was then projected using those increasing levels of projected room occupancy. Forecasts for each demand component were prepared as follows:

Leisure Visitors are from domestic and foreign sources and projections were based on total populations of those sources. Local studies of tourism by Behavior Research Center (Metro Phoenix Visitor Study, draft 1992) and NAU Arizona Hospitality Research & Resource Center (1990-91 Arizona Visitor Profile, 1992) provided information on what states, regions, and nations Maricopa County visitors come from, and what proportion of total visitors they represented in 1990. Table IV-5 shows the results of applying these percentages to the population of those U.S. states and regions as projected by the Bureau of Economic Analysis.

Primary sources of foreign visitors to Maricopa County, 12% of the total visitors, are shown in Table IV-6, with Table IV-7 showing the results of applying the percentage of total visitors from those nations to their projected populations as per United Nations Department of International Economic & Social Affairs projections (World Population Prospects 1990, medium variant used).

FIGURE IV-1

HOTEL/MOTEL MARKET REGIONS
FOR OCCUPANCY RATE INFORMATION

Group Visitors were determined to be from domestic sources with growth of the component viewed as a function of the economy in other states. Lacking specific information on sources of group visitors, it was reasoned that similar motivations regarding destination would apply to group as well as to leisure visitors from the domestic sources. Therefore, only the domestic component of the data was used to derive a percentage of visitors from states and regions. Projections were based upon employment levels in those states as projected by the Bureau of Economic Analysis, multiplied by the percentage of the total visitors to Maricopa County from the 1990 baseline with the results shown in Table IV-8. This also differs from the Leisure component in that population was used to drive the projections for that component.

Business Visitors were determined to be from domestic sources with growth of the component viewed as a function of the local economy. As shown in Table IV-9, a baseline of the 1990 employment level in Maricopa County and projections to 2040 were determined from employment data from the Maricopa Association of Governments (MAG). The total of business visitors in Table IV-9 and Table IV-4 is a constant percentage of Maricopa County employment in the forecast years. This percentage is 9.77%.

Other Visitors were viewed as a proportion of visitors from the three primary components: Leisure, Group, and Business. This proportion, 4.93%, is an average drawn from 1985 and 1990 information. Therefore, projections for other visitors, or other transient population, was derived from summing the Leisure, Group, and Business components and multiplying by 4.93%.

Peak Occupancy Projections. Once average occupancy rates and populations were established it was possible to determine peak transient populations. Information was obtained from the Phoenix & Valley of the Sun Convention & Visitors Bureau showing peak occupancy levels of:

Year	Peak	Average	Ratio
1990	87.7%	62.8%	1.3965
1991	85.0%	60.3%	1.4026
1992	80.2%	62.6%	1.2812
		Average:	1.3624

Note that differences between the Deloitte & Touche and the Phoenix & Valley of the Sun Convention & Visitors Bureau in 1990 average occupancy are due to differences in methodology and inventory included. The ratio of peak to average occupancy rates is nonetheless a valid factor in predicting peak population.

The average peak occupancy levels were divided by the average occupancy levels with the results averaged, resulting in a factor of 1.3624. Peak occupancy/population was derived by multiplying the average occupancy/population by that factor throughout the projection series (lower half of Table IV-4).

3.2   Seasonal Population

The other main component of non-residential population is seasonal population. Table IV-10 is a compilation of seasonal population residing in mobile homes, recreational vehicles/travel trailers, and within resident housing. These component groups are addressed separately.

Seasonal Population Residing in Mobile Homes. The baseline information for this component was taken from the 1992 edition of the annual Winter Resident Study of seasonal visitors by Arizona State University, Center for Business Research. The Table IV-11 inventory was adjusted to subtract Pinal County mobile home parks from the ASU study. Peak occupancy levels according to the study were 87%, with 45% being occupied by seasonal (winter) visitors. Seasonal population was determined by multiplying that seasonal occupancy by 2.0 as indicated by this Winter Resident Study from Arizona State University.

Seasonal population in mobile homes seems to be a function of age and place of primary residence. It was determined through the 1993 Winter Resident Survey prepared by the Market Research Department of the Arizona Republic/Phoenix Gazette and conducted by Arizona State University that the typical seasonal visitor staying in a mobile home is 65 years of age or greater; the place of primary residence was taken from the same survey. A majority of those surveyed were multi-year visitors so major geographical shifts were deemed unlikely.

While the survey showed 17% of seasonal visitors were from Canada, the specific province was not indicated. For these projections, it was determined to consider the four southwestern Canadian provinces (Manitoba, Saskatchewan, Alberta, and British Columbia) as the source of visitors. This area is roughly consistent geographically (taking into account distance and population centers) with the domestic sources of visitors, that is, primarily near the Mid-Western and Western regions of the U.S.

The results of applying the baseline percentage of seasonal visitors in mobile homes by place of primary residence to the population aged 65 and greater in those states and provinces is shown in Table IV-12. Those projections of seasonal population were transferred to Table IV-11; the inventory, occupancy, and seasonal occupancy columns were then derived using the 1990 baseline census ratios of 2.0 persons per unit, 87% occupancy of which 45% was seasonal.

Seasonal Population Residing in Recreational Vehicles. The baseline information for this component was taken from the 1992 edition of the annual Winter Resident Study of seasonal visitors by Arizona State University, Center for Business Research. The Table IV-13 inventory was adjusted to subtract Pinal County RV parks from the ASU study. Peak occupancy levels according to the study were 90%, with 82% being occupied by seasonal (winter) visitors. Seasonal population in RV's was determined by multiplying that seasonal occupancy by 2.0 persons per unit as indicated by the Arizona State University study.

Seasonal population in RV's was viewed as a function of age and place of primary residence as with Mobile Homes. It was determined through the 1993 Winter Resident Survey prepared by the Market Research Department of the Arizona Republic/Phoenix Gazette and conducted by Arizona State University that the typical seasonal visitor staying in an RV is 65 years of age or older; the place of primary residence was taken from the same survey. The same method used to project demand by residents of Canada was used for Mobile Homes, described above.

The results of applying the baseline percentage of seasonal visitors in RV's by place of primary residence to the population aged 65 and greater in those states and provinces is shown in Table IV-14. Those projections of seasonal population were transferred to Table IV-13; the inventory, occupancy, and seasonal occupancy columns were then derived using the 1990 baseline ratios of 2.0 persons per unit, 90% occupancy of which 82% was seasonal.

Seasonal Population Quartered in Other Housing. The baseline for Table IV-15 was derived from 1990 Census data. The 1990 Census contains information on the vacancy status of housing units. The units which could be considered to house seasonal population are those vacant units held for seasonal, migrant or other uses, as defined by the Census. For 1990, this number was 56,220, or 5.905% of the 952,041 total housing units in Maricopa County. Seasonal mobile home units, accounted for earlier in this study, were subtracted from total seasonal housing to yield other seasonal housing units.

Projections in Table IV-15 were derived by using MAG projections of total housing units multiplied by the same ratio (5.905%) of seasonal to total housing units to project seasonal housing units. Seasonal mobile home units were subtracted to yield other seasonal housing. The projection for the seasonal resident population in other housing was derived by multiplying the seasonal units by 2.0 persons per unit as indicated by Arizona State University studies on seasonal visitors.

4.0   COUNTY-LEVEL DEMOGRAPHIC CHARACTERISTICS

The final section of this white paper presents selected demographic characteristics to be determined under this task of the Socioeconomic Models Enhancement Project. In general, these characteristics are quantitative socioeconomic and demographic factors required in developing small-area projections of population and employment.

Specifically, the relationships quantified include:

- Income characteristics
  - Workers per household by income quintile
  - Workers per household by income quintile and economic sector
  - Population per household by income quintile
  - Retirement population by income category
- Unemployment rates by sector
- Vacancy status by unit type

Measurements for all of these characteristics were derived from the 1990 Census Public Use Microdata Sample (PUMS) for Maricopa County, Arizona. Household and person information was extracted and combined as necessary to enable the desired cross-tabulations to be performed. The results are as follows.

4.1 WORKERS AND PERSONS PER HOUSEHOLD

Table IV-16 shows the population and number of households in Maricopa County for MAG income quintiles based on the PUMS sample. The household income breakpoint for the quintile were $15,000, $25,000, $35,000 and $50,000. The income quintiles in the sample contain between 6,158 and 9,526 households each.

The lowest quintile, households with $15,000 or less in annual income, had an average size of 2.06 persons, with only 0.60 workers. In the second quintile the population per household increases to 2.31, while workers per household increases to 0.99. Both household size and number of workers increase with income, although in the upper quintiles the number of workers increases faster than the size of the households. In the highest quintile, households with annual incomes of more than $50,000, the household size is 3.11 persons, 1.77 of whom are workers.

The overall averages calculated from this sample, 2.64 persons per household and 1.26 workers per household, are both very consistent with the County levels. The 1990 Census reported an average household size of 2.59, and the imputed number of workers per household was 1.28.

A similar measurement, workers by household income quintile AND economic sector is shown in Table IV-17. These figures reflect the distribution of workers by household income category based on the industry of the employed person.

The results show distinctive differences in the household incomes of workers in different industries. As expected, the agriculture industry has the largest share of workers in households in the lowest income range. Somewhat surprisingly, the Utility Industry has the largest share of its workers in the highest income category.

The exact cause of the variation among industries is somewhat more difficult to interpret. It seems that household income level of persons could be impacted by a great number of variables including, but not limited to:

- Wage levels in the industry
- Demographics of persons employed in the industry
- The prevalence of unions, etc. in some industries

Overall, it seems that the income categories are too low, grouping too many workers in the highest income category.

4.2 RETIREMENT POPULATION BY INCOME CATEGORY

Using the income categories described above, Table IV-18 demonstrates the relatively lower incomes of the retired population. In this analysis, households with heads over age 65, and those with a majority of people over age 65, were determined to be "retired" households.

The sample data shows that about 43 percent of the retired households have incomes placing them in the bottom quintile of all households. However, since the persons per household

figure in the category is only 1.43, the total share of retired population in this category is 36.3 percent. This compares with 2.06 persons per households, representing 15.7 percent of the population in the bottom quintile for the general population.

In each income category the household size of the retired population is much smaller than in the general population, rising to only 1.99 in the uppermost income categories. The data also clearly demonstrates how incomes are affected by the loss of a spouse, since nearly half of the households in the lowest category appear to contain only one person.

To determine projections of retirement population by income quintile, population by age projections for age 65 and over from the Arizona Department of Economic Security are used. The 1990 share of population in each income category is applied to the projected population over age 65 to yield projected retired population by income category.

The resulting projections, shown in Table IV-19, are in constant 1990 dollars and do not reflect real growth in income over the period, if any. Although the thresholds for income categories will change significantly in terms of current dollars, there is no evidence to suggest that the share of population in each quintile will change significantly.

4.3   UNEMPLOYMENT RATES BY SECTOR

Table IV-20 shows unemployment rates by economic sector as derived from the Census PUMS sample. This data represents the conditions in early 1990, when the total unemployment rate was around 5.5 percent. It has, of course, increased significantly since then. The industry detail shown was selected to generally correspond with that reported by the Arizona Department of Economic Security for Maricopa County.

The rates show significant differences in employment characteristics across the sectors. Unemployment rates were highest in mining (16.7 percent), and lowest for utilities (2.2 percent). However, it must be noted that the rate for mining may be distorted due to the small number of observations included in the PUMS sample.

Unemployment rates in other sectors seem very reasonable. Agriculture and construction were high at around 10 percent, while government and professional services were quite low at between 2.7 and 2.9 percent. Others generally fell in the range of 4 to 7 percent, which again seems reasonable.

Although it is expected the some changes will occur in these unemployment rates over time, we can find no predictions of exactly how these changes will occur. The number of persons in any given industry can change relatively quickly, as industries expand or contract -- the result of having a mobile work force. Thus, the relationship of unemployment rates across industries is more a function of the characteristics of the industry than of economic condition. While the overall unemployment rate may vary significantly over time, there is no prospective information for changes in the relationship across industries.

4.4 VACANCY STATUS BY UNIT TYPE

This piece of information is provided as an informational item in the further exploration of Census vacancy rates. Table IV-21 shows vacancy status statistics by unit type for Maricopa County, as well as 16 Public-Use Microdata Areas (PUMAs), all based on the 5 percent sample data from PUMS.

This information shows the distinction between units that are vacant from a real estate perspective (for rent, for sale, sold or rented but not occupied), versus those which are typically vacant but are held for seasonal, recreational and other uses.

Based on total housing units, the sample data in Table IV-21 is fairly consistent with the 100-percent count number available from the Census (adjusted vacancy of 11.13% for PUMS versus 9.85%). The information added through using PUMS data is the detail for adjusted occupancy rates by type of unit. The data for each PUMA is supplied so that this information could be used to estimate seasonal housing units on a sub-county level.

TABLE IV-1

GROUP QUARTERS POPULATION
MARICOPA COUNTY
1985 - 2040

Year	Military	Jails	Colleges	Nursing Homes	Other	Total Group Quarters	Total Population
1985	1,316	6,043	5,553	7,190	8,269	**28,371**	1,837,956
1990	1,316	8,472	5,256	8,659	9,607	**33,310**	2,122,101
1993	1,316	9,123	4,242	9,206	10,345	**34,233**	2,285,199
1995	1,002	9,580	4,868	9,510	10,863	**35,823**	2,399,600
2000	1,002	10,839	5,487	10,020	12,292	**39,640**	2,715,097
2005	1,002	12,102	6,569	10,521	13,723	**43,918**	3,031,348
2010	1,002	13,425	7,723	11,592	15,223	**48,965**	3,362,685
2015	1,002	14,868	8,509	13,613	16,859	**54,851**	3,724,105
2020	1,002	16,435	8,737	16,239	18,636	**61,049**	4,116,601
2025	1,002	18,087	9,366	19,844	20,510	**68,808**	4,530,399
2030	1,002	19,782	10,447	23,867	22,432	**77,530**	4,955,065
2035	1,002	21,491	11,702	26,639	24,370	**85,203**	5,383,040
2040	1,002	23,187	12,702	28,235	26,293	**91,419**	5,807,906

Sources:
   Arizona Department of Economic Security, Research Administration, 1993.
   U.S. Department of Commerce, Bureau of the Census, 1990.
   Economic Strategies Group, 1994.

TABLE IV-2

COLLEGE AGED & COLLEGE GROUP QUARTERS
RESIDENT POPULATION
MARICOPA COUNTY
2010 - 2040

Year	18-19	20-22	Total 18-22	Colleges
1995	61,436	96,704	158,140	**4,868**
2000	74,854	103,099	177,953	**5,478**
2005	89,083	124,304	213,387	**6,569**
2010	104,341	146,525	250,866	**7,723**
2015	105,836	170,577	276,413	**8,509**
2020	111,490	172,324	283,814	**8,737**
2025	123,170	181,064	304,235	**9,366**
2030	139,981	199,357	339,337	**10,447**
2035	154,880	225,256	380,136	**11,702**
2040	165,489	247,126	412,615	**12,702**

Sources:

Arizona Department of Economic Security, Research
   Administration, 1993.
Economic Strategies Group, 1993.

TABLE IV-3

TOTAL & NURSING HOME POPULATION OF PERSONS OVER AGE 65
MARICOPA COUNTY
1993 - 2040

Year	65-69	70-74	75-79	80-84	85-89	90-94	95+	Total Over 65	Nursing Homes
1993	80,807	76,221	58,071	38,555	19,491	7,201	2,057	282,403	9,206
1995	77,890	77,781	60,742	41,781	21,969	8,891	2,653	291,707	9,510
2000	76,034	71,345	66,837	47,529	28,141	12,674	4,795	307,355	10,020
2005	84,846	69,445	61,169	52,238	31,936	16,194	6,916	322,744	10,521
2010	108,808	77,410	59,376	47,704	35,071	18,341	8,861	355,571	11,592
2015	143,844	99,138	66,199	46,200	31,959	20,141	10,108	417,589	13,613
2020	170,553	130,952	84,710	51,580	30,895	18,319	11,111	498,120	16,239
2025	213,309	155,078	111,842	65,971	34,562	17,670	10,265	608,697	19,844
2030	245,284	193,739	132,230	87,065	44,179	19,803	9,818	732,118	23,867
2035	232,759	222,326	164,920	102,689	58,269	25,281	10,891	817,135	26,639
2040	223,424	210,581	188,692	127,811	68,525	33,313	13,756	866,102	28,235

Sources:
   Arizona Department of Economic Security, Research Administration, 1993.
   Economic Strategies Group, 1993.

TABLE IV-4

DAILY TRANSIENT POPULATION
MARICOPA COUNTY
1985 - 2040

| Year | Rooms | | People | | | | |
	Inventory	Occupied	Leisure	Group	Business	Other	Total
Average Occupancy							
1985	27,348	16,855	11,653	4,294	7,050	1,214	24,211
1990	36,311	21,485	12,724	6,373	9,533	1,312	29,941
1993	37,485	22,826	13,102	6,627	10,377	1,484	31,590
1995	38,977	23,485	13,354	6,796	10,758	1,524	32,432
2000	42,347	25,974	13,895	7,179	12,602	1,660	35,336
2005	45,017	28,099	14,386	7,428	14,220	1,776	37,810
2010	46,781	29,707	14,845	7,566	15,436	1,866	39,713
2015	48,020	31,014	15,240	7,512	16,538	1,937	41,227
2020	49,257	32,346	15,631	7,458	17,667	2,009	42,765
2025	50,769	33,889	15,825	7,404	19,101	2,087	44,417
2030	52,203	35,412	16,011	7,351	20,519	2,163	46,044
2035	53,509	36,877	16,187	7,297	21,887	2,236	47,607
2040	54,656	38,259	16,349	7,243	23,182	2,306	49,080
Peak Occupancy							
1985	27,348	22,963	15,876	5,850	9,605	1,653	32,985
1990	36,311	29,271	17,335	8,683	12,988	1,787	40,792
1993	37,485	31,098	17,850	9,029	14,138	2,022	43,038
1995	38,977	31,996	18,193	9,259	14,657	2,076	44,185
2000	42,347	35,387	18,931	9,781	17,169	2,262	48,142
2005	45,017	38,283	19,599	10,120	19,373	2,420	51,513
2010	46,781	40,472	20,225	10,308	21,030	2,542	54,104
2015	48,020	42,253	20,763	10,234	22,531	2,639	56,167
2020	49,257	44,069	21,296	10,161	24,070	2,737	58,263
2025	50,769	46,170	21,560	10,087	26,023	2,843	60,513
2030	52,203	48,245	21,813	10,015	27,955	2,947	62,730
2035	53,509	50,241	22,053	9,941	29,819	3,047	64,860
2040	54,656	52,124	22,274	9,868	31,583	3,141	66,866

Sources:

United States Bureau of Economic Analysis, Regional Projections to 2040, 1990.

Northern Arizona University, Visitor Profile, 1990-1991.

United Nations Department of International Economic & Social Affairs, World Population Prospects, 1990.

Maricopa Association of Governments, 1993.

Economic Strategies Group, 1993.

TABLE IV-5

AVERAGE DAILY LEISURE VISITORS TO MARICOPA COUNTY

FROM DOMESTIC SOURCES

1990 - 2040

Region/State	1990 Population (thousands)	1990 Maricopa Visitors	1993 Population (thousands)	1993 Maricopa Visitors	1995 Population (thousands)	1995 Maricopa Visitors	2000 Population (thousands)	2000 Maricopa Visitors	2005 Population (thousands)	2005 Maricopa Visitors	2010 Population (thousands)	2010 Maricopa Visitors
New York	18,023	763	18,194	771	18,308	776	18,506	784	18,715	793	18,950	803
New Jersey	7,851	382	8,047	391	8,177	398	8,470	412	8,739	425	8,989	437
Pennsylvania	12,091	382	12,226	386	12,316	389	12,515	395	12,719	402	12,953	409
Massachusetts	5,968	254	6,087	260	6,166	263	6,342	270	6,513	278	6,674	285
Other East	57,183	127	58,202	130	58,882	131	60,281	134	61,608	137	62,910	140
Illinois	11,749	636	11,951	647	12,086	654	12,362	669	12,625	684	12,883	698
Michigan	9,329	382	9,463	387	9,552	391	9,733	398	9,913	406	10,101	413
Minnesota	4,373	382	4,472	390	4,538	396	4,657	407	4,765	416	4,869	425
Missouri	5,194	254	5,272	258	5,325	261	5,434	266	5,539	271	5,647	277
Iowa	2,862	254	2,905	258	2,933	261	2,981	265	3,030	269	3,084	274
Indiana	5,611	254	5,695	258	5,750	261	5,881	267	6,006	272	6,131	278
Ohio	10,930	254	11,042	257	11,117	259	11,261	262	11,417	266	11,596	270
Wisconsin	4,912	254	4,998	259	5,055	262	5,159	267	5,258	272	5,360	278
Other Midwest	5,531	254	5,611	258	5,665	261	5,753	265	5,840	269	5,936	273
Florida	12,728	382	13,319	399	13,712	411	14,575	437	15,331	460	16,026	481
Other South	46,941	1,018	47,843	1,037	48,445	1,051	49,685	1,077	50,815	1,102	51,957	1,127
California	29,188	1,654	30,499	1,728	31,373	1,778	33,166	1,880	34,706	1,967	36,045	2,043
Arizona	3,623	763	3,823	806	3,957	834	4,236	893	4,478	944	4,689	988
Texas	17,067	636	17,405	649	17,631	657	18,072	674	18,434	687	18,758	699
Colorado	3,385	382	3,512	396	3,596	405	3,784	427	3,947	445	4,086	461
New Mexico	1,540	254	1,588	263	1,621	268	1,691	280	1,749	289	1,798	297
Oregon	2,822	254	2,905	262	2,960	267	3,070	277	3,166	285	3,255	294
Utah	1,733	254	1,798	264	1,841	270	1,943	285	2,025	297	2,095	308
Washington	4,761	254	4,932	264	5,045	270	5,272	282	5,474	293	5,653	302
Other West	8,336	509	8,531	521	8,662	529	8,934	545	9,185	561	9,427	576
United States		11,197		11,499		11,701		12,118		12,489		12,833

TABLE IV-5 (continued)

AVERAGE DAILY LEISURE VISITORS TO MARICOPA COUNTY
FROM DOMESTIC SOURCES
1990 - 2040

Region/State	2015 Population (thousands)	2015 Maricopa Visitors	2020 Population (thousands)	2020 Maricopa Visitors	2025 Population (thousands)	2025 Maricopa Visitors	2030 Population (thousands)	2030 Maricopa Visitors	2035 Population (thousands)	2035 Maricopa Visitors	2040 Population (thousands)	2040 Maricopa Visitors
New York	19,186	813	19,422	823	19,432	823	19,443	824	19,453	824	19,463	824
New Jersey	9,176	446	9,363	455	9,423	458	9,482	461	9,542	464	9,601	467
Pennsylvania	13,225	418	13,497	426	13,582	429	13,667	431	13,752	434	13,837	437
Massachusetts	6,803	290	6,931	296	6,968	297	7,005	299	7,042	300	7,079	302
Other East	64,035	142	65,160	145	65,443	146	65,726	146	66,008	147	66,291	148
Illinois	13,114	710	13,345	723	13,404	726	13,463	729	13,521	732	13,580	735
Michigan	10,286	421	10,470	428	10,519	430	10,569	432	10,618	434	10,667	436
Minnesota	4,958	433	5,046	440	5,069	442	5,092	444	5,114	446	5,137	448
Missouri	5,754	282	5,860	287	5,889	289	5,918	290	5,946	291	5,975	293
Iowa	3,143	279	3,202	285	3,218	286	3,235	288	3,251	289	3,267	290
Indiana	6,245	283	6,359	288	6,390	290	6,421	291	6,451	293	6,482	294
Ohio	11,791	275	11,986	279	12,029	280	12,072	281	12,115	282	12,158	283
Wisconsin	5,457	283	5,553	288	5,577	289	5,602	290	5,626	291	5,650	293
Other Midwest	6,038	278	6,140	283	6,163	284	6,186	285	6,209	286	6,232	287
Florida	16,654	499	17,281	518	17,594	528	17,906	537	18,219	546	18,531	556
Other South	52,945	1,148	53,933	1,170	54,208	1,176	54,484	1,181	54,759	1,187	55,034	1,193
California	36,949	2,094	37,853	2,145	38,195	2,165	38,538	2,184	38,880	2,203	39,222	2,223
Arizona	4,864	1,025	5,039	1,062	5,124	1,080	5,209	1,098	5,293	1,115	5,378	1,133
Texas	19,054	710	19,350	721	19,406	723	19,462	725	19,517	728	19,573	730
Colorado	4,178	471	4,269	481	4,300	485	4,332	488	4,363	492	4,394	495
New Mexico	1,837	304	1,875	310	1,887	312	1,900	314	1,912	316	1,924	318
Oregon	3,332	300	3,409	307	3,437	310	3,464	312	3,492	315	3,519	317
Utah	2,148	315	2,200	323	2,219	326	2,238	329	2,257	331	2,276	334
Washington	5,792	310	5,931	317	5,983	320	6,036	323	6,088	325	6,140	328
Other West	9,638	588	9,848	601	9,921	606	9,993	610	10,066	615	10,138	619
United States		13,117		13,402		13,497		13,593		13,689		13,784

Sources:
United States Bureau of Economic Analysis, Regional Projections to 2040, 1990.
Behavior Research Center, Metro Phoenix Visitor Study, 1992.
Economic Strategies Group, 1993.

TABLE IV-6

DAILY SOURCES OF FOREIGN VISITORS
TO MARICOPA COUNTY 1990

Country	Share of Foreign Visitors	Number of Visitors per Country	Country Population	Share of Population Visiting Maricopa County
Canada	0.0862	132	26,521,000	0.000496%
Mexico	0.7272	1,110	88,598,000	0.001253%
Japan	0.0682	104	123,460,000	0.000084%
Germany	0.0290	44	77,573,000	0.000057%
United Kingdom	0.0452	69	57,237,000	0.000121%
France	0.0273	42	56,138,000	0.000074%
Italy	0.0170	26	57,061,000	0.000045%
Total	1.0000	1,527		

Source:

Source of Total - Northern Arizona University, Visitor Profile, 1990-91.
Share of Total - Behavior Research Center, Metro Phoenix Visitor Study, 1992
Economic Strategies Group, 1993.

TABLE IV-7

AVERAGE DAILY LEISURE VISITORS TO MARICOPA COUNTY
FROM FOREIGN SOURCES
1990 - 2040

Country	1990 Population	1990 Maricopa Visitors	1993 Population	1993 Maricopa Visitors	1995 Population	1995 Maricopa Visitors	2000 Population	2000 Maricopa Visitors	2005 Population	2005 Maricopa Visitors	2010 Population	2010 Maricopa Visitors
Canada	26,521,000	132	27,142,600	135	27,557,000	137	28,488,000	141	29,332,000	146	30,149,000	150
Mexico	88,598,000	1,110	94,219,400	1,181	97,967,000	1,228	107,233,000	1,344	116,302,000	1,458	125,166,000	1,569
Japan	123,460,000	104	124,926,400	105	125,904,000	106	128,470,000	108	130,468,000	110	131,035,000	111
Germany	77,573,000	44	77,427,200	44	77,330,000	44	76,962,000	44	76,182,000	43	75,145,000	43
United Kingdom	57,237,000	69	57,613,200	70	57,864,000	70	58,393,000	70	58,704,000	71	58,973,000	71
France	56,138,000	42	56,738,000	42	57,138,000	42	58,145,000	43	58,856,000	44	59,404,000	44
Italy	57,061,000	26	57,092,800	26	57,114,000	26	57,195,000	26	56,889,000	26	56,199,000	26
Foreign		1,527		1,603		1,653		1,777		1,897		2,012

Country	2015 Population	2015 Maricopa Visitors	2020 Population	2020 Maricopa Visitors	2025 Population	2025 Maricopa Visitors	2030 Population	2030 Maricopa Visitors	2035 Population	2035 Maricopa Visitors	2040 Population	2040 Maricopa Visitors
Canada	30,885,000	153	31,491,000	156	31,923,000	158	32,210,512	160	32,348,845	161	32,335,352	160
Mexico	133,799,000	1,677	142,135,000	1,781	150,062,000	1,881	157,408,451	1,973	164,041,846	2,056	169,836,866	2,128
Japan	130,348,000	110	129,029,000	109	127,496,000	108	125,291,590	106	122,447,595	103	119,005,839	100
Germany	73,939,000	42	72,469,000	41	70,909,000	40	69,193,865	39	67,335,375	38	65,346,372	37
United Kingdom	59,273,000	72	59,544,000	72	59,658,000	72	59,719,167	72	59,727,292	72	59,682,304	72
France	59,828,000	44	60,169,000	45	60,372,000	45	60,456,208	45	60,420,890	45	60,266,019	45
Italy	55,248,000	25	54,138,000	25	52,964,000	24	51,815,459	24	50,691,824	23	48,629,462	22
Foreign		2,123		2,229		2,328		2,418		2,498		2,565

Sources:
  United Nations Department of International Economic & Social Affairs, World Population Prospects, 1990.
  Northern Arizona University, Visitor Profile, 1990-91.
  Behavior Research Center, Metro Phoenix Visitor Study
  Economic Strategies Group, 1993.

TABLE IV-8

AVERAGE DAILY GROUP VISITORS TO MARICOPA COUNTY
FROM DOMESTIC MARKETS
1990 - 2040

Region/State	1990 Employment (thousands)	1990 Maricopa Visitors	1993 Employment (thousands)	1993 Maricopa Visitors	1995 Employment (thousands)	1995 Maricopa Visitors	2000 Employment (thousands)	2000 Maricopa Visitors	2005 Employment (thousands)	2005 Maricopa Visitors	2010 Employment (thousands)	2010 Maricopa Visitors
New York	9,887	428	10,116	438	10,270	445	10,593	459	10,750	466	10,783	467
New Jersey	4,441	214	4,595	222	4,698	227	4,930	238	5,075	245	5,149	248
Pennsylvania	6,165	214	6,326	220	6,434	223	6,684	232	6,825	237	6,880	239
Massachusetts	3,848	143	3,968	147	4,048	150	4,229	157	4,342	161	4,394	163
Other East	8,213	71	8,493	74	8,680	75	9,110	79	9,383	82	9,521	83
Illinois	6,303	357	6,508	369	6,645	376	6,953	394	7,143	404	7,238	410
Michigan	4,609	214	4,752	221	4,847	225	5,061	235	5,193	241	5,260	244
Minnesota	2,613	214	2,709	222	2,773	227	2,905	238	2,986	245	3,026	248
Missouri	2,979	143	3,063	147	3,119	149	3,252	156	3,331	160	3,367	161
Iowa	1,607	143	1,656	147	1,689	150	1,757	156	1,797	160	1,815	161
Indiana	3,002	143	3,099	147	3,163	150	3,310	157	3,400	162	3,447	164
Ohio	5,720	143	5,866	146	5,964	149	6,185	154	6,311	157	6,361	159
Wisconsin	2,744	143	2,831	147	2,889	150	3,013	157	3,085	160	3,119	162
Other Midwest	3,166	143	3,253	147	3,311	149	3,435	155	3,504	158	3,532	159
Florida	6,774	214	7,148	226	7,397	234	7,994	253	8,412	266	8,665	274
Other South	24,620	571	25,424	590	25,960	602	27,161	630	27,884	647	28,258	655
California	16,297	1,020	17,175	1,075	17,760	1,111	19,070	1,193	19,979	1,250	20,539	1,285
Arizona	1,886	428	2,009	456	2,091	475	2,286	519	2,428	552	2,522	573
Texas	8,720	357	9,011	369	9,205	377	9,653	395	9,922	406	10,054	411
Colorado	1,999	214	2,093	224	2,156	231	2,304	247	2,405	258	2,466	264
New Mexico	723	143	757	150	780	154	829	164	861	170	879	174
Oregon	1,545	143	1,605	148	1,644	152	1,733	160	1,787	165	1,814	168
Utah	858	143	903	150	933	155	1,010	168	1,064	177	1,098	183
Washington	2,629	143	2,749	149	2,829	154	3,004	163	3,122	170	3,190	173
Other West	4,447	286	4,619	297	4,734	304	4,989	320	5,153	331	5,243	337
Total		6,373		6,627		6,796		7,179		7,428		7,566

TABLE IV-8 (continued)

AVERAGE DAILY GROUP VISITORS TO MARICOPA COUNTY
FROM DOMESTIC MARKETS
1990 - 2040

Region/State	2015 Employment (thousands)	2015 Maricopa Visitors	2020 Employment (thousands)	2020 Maricopa Visitors	2025 Employment (thousands)	2025 Maricopa Visitors	2030 Employment (thousands)	2030 Maricopa Visitors	2035 Employment (thousands)	2035 Maricopa Visitors	2040 Employment (thousands)	2040 Maricopa Visitors
New York	10,593	459	10,404	451	10,255	444	10,106	438	9,957	431	9,809	425
New Jersey	5,098	246	5,048	243	5,002	241	4,957	239	4,912	237	4,866	235
Pennsylvania	6,784	236	6,687	232	6,609	230	6,531	227	6,452	224	6,374	221
Massachusetts	4,344	161	4,294	159	4,250	158	4,207	156	4,164	155	4,121	153
Other East	9,430	82	9,339	81	9,258	80	9,176	80	9,095	79	9,013	78
Illinois	7,160	405	7,083	401	7,015	397	6,947	393	6,880	390	6,812	386
Michigan	5,202	242	5,145	239	5,095	237	5,046	234	4,996	232	4,947	230
Minnesota	2,994	245	2,962	243	2,933	240	2,905	238	2,877	236	2,848	233
Missouri	3,326	159	3,285	157	3,251	156	3,216	154	3,181	152	3,147	151
Iowa	1,792	159	1,769	157	1,750	155	1,730	154	1,711	152	1,692	150
Indiana	3,411	162	3,376	161	3,344	159	3,313	158	3,281	156	3,250	155
Ohio	6,271	156	6,181	154	6,107	152	6,034	151	5,961	149	5,888	147
Wisconsin	3,081	160	3,043	158	3,010	157	2,978	155	2,946	153	2,914	152
Other Midwest	3,483	157	3,434	155	3,394	153	3,354	151	3,314	149	3,274	148
Florida	8,667	274	8,669	274	8,648	273	8,627	273	8,606	272	8,585	271
Other South	27,970	649	27,683	642	27,430	636	27,177	630	26,925	624	26,672	619
California	20,518	1,284	20,497	1,282	20,430	1,278	20,364	1,274	20,297	1,270	20,231	1,266
Arizona	2,536	576	2,550	579	2,552	580	2,554	580	2,556	581	2,559	581
Texas	9,948	407	9,842	403	9,750	399	9,657	395	9,564	391	9,471	388
Colorado	2,460	263	2,454	263	2,443	262	2,433	261	2,423	259	2,412	258
New Mexico	874	173	869	172	863	170	857	169	852	168	846	167
Oregon	1,797	166	1,780	164	1,764	163	1,748	161	1,733	160	1,717	159
Utah	1,100	183	1,102	183	1,100	183	1,098	183	1,097	183	1,095	182
Washington	3,174	172	3,158	171	3,140	171	3,122	170	3,104	169	3,086	168
Other West	5,205	334	5,166	332	5,129	329	5,092	327	5,054	325	5,017	322
Total		**7,512**		**7,458**		**7,404**		**7,351**		**7,297**		**7,243**

Sources:
Bureau of Economic Analysis, Regional Projections to 2040, 1990.
Behavior Research Center, Metro Phoenix Visitor Study, 1992.
Economic Strategies Group, 1993.

TABLE IV-9

PROJECTED AVERAGE DAILY
BUSINESS VISITORS TO MARICOPA COUNTY
BASED ON EMPLOYMENT GROWTH
1990 - 2040

Year	Employment	Business Visitors
1990	975,037	9,535
1993	1,061,144	10,377
1995	1,100,082	10,758
2000	1,288,659	12,602
2005	1,454,145	14,220
2010	1,578,417	15,436
2015	1,691,143	16,538
2020	1,806,578	17,667
2025	1,953,211	19,101
2030	2,098,219	20,519
2035	2,238,172	21,887
2040	2,370,515	23,182

Sources:
Maricopa Association of Governments, 1993.
United States Bureau of Economic Analysis, Regional
Projections to 2040, 1990.
Economic Strategies Group, 1993.

TABLE IV-10

PEAK DAILY SEASONAL POPULATION
MARICOPA COUNTY
1990 - 2040

Year	Mobile Home	Recreational Vehicle	Resident Housing	Total
1990	43,636	52,525	68,804	164,965
1995	45,364	51,407	81,799	178,570
2000	46,714	52,937	97,612	197,263
2005	48,460	54,914	113,065	216,439
2010	52,610	59,617	126,975	239,202
2015	61,132	69,275	138,162	268,569
2020	69,811	79,110	151,006	299,927
2025	76,022	86,148	167,780	329,950
2030	84,453	95,701	183,097	363,251
2035	90,780	102,871	200,957	394,608
2040	97,207	110,154	218,661	426,022

Sources:
  Arizona State University, Center for Business Research.
  Bureau of Economic Analysis, Regional Projections to 2040, 1990.
  United Nations Department of International Economics & Social
    Affairs, World Population Prospects, 1990.
  Maricopa Association of Governments, 1993.
  Economic Strategies Group, 1993.

TABLE IV-11

PEAK DAILY SEASONAL POPULATION IN MOBILE HOMES
MARICOPA COUNTY
1990 - 2040

Year	Units			Seasonal Population
	Inventory	Occupied	Seasonal	
1990	53,871	48,484	21,818	43,636
1992	56,431	49,095	22,093	44,185
1995	57,936	50,404	22,682	45,364
2000	59,660	51,904	23,357	46,714
2005	61,890	53,844	24,230	48,460
2010	67,190	58,456	26,305	52,610
2015	78,074	67,924	30,566	61,132
2020	89,158	77,568	34,906	69,811
2025	97,091	84,469	38,011	76,022
2030	107,858	93,837	42,227	84,453
2035	115,939	100,867	45,390	90,780
2040	124,147	108,008	48,604	97,207

Source:
  Arizona State University, Center for Business Research.
  Bureau of Economic Analysis, Regional Projections to 2040, 1990.
  United Nations Department of International Economics & Social
     Affairs, World Population Prospects, 1990.
  Economic Strategies Group, 1993.

TABLE IV-12

PEAK DAILY SEASONAL POPULATION IN MOBILE HOMES
FROM DOMESTIC & CANADIAN SOURCES
1992 - 2040

Region/State	1992 Population over 65	1992 Maricopa Visitors	1995 Population over 65	1995 Maricopa Visitors	2000 Population over 65	2000 Maricopa Visitors	2005 Population over 65	2005 Maricopa Visitors	2010 Population over 65	2010 Maricopa Visitors	2015 Population over 65	2015 Maricopa Visitors
Minnesota	570,000	6,186	582,000	6,316	592,000	6,425	608,000	6,598	654,000	7,098	758,000	8,226
Iowa	436,571	4,419	442,000	4,473	441,000	4,463	447,000	4,524	476,000	4,818	550,000	5,567
Wisconsin	674,571	3,977	688,000	4,056	698,000	4,115	716,000	4,221	768,000	4,527	889,000	5,241
Illinois	1,500,286	3,535	1,532,000	3,610	1,556,000	3,666	1,597,000	3,763	1,716,000	4,043	1,989,000	4,686
Michigan	1,159,571	3,535	1,193,000	3,637	1,227,000	3,740	1,273,000	3,881	1,380,000	4,207	1,599,000	4,874
Northeast	3,755,714	2,209	3,846,000	2,262	3,940,000	2,318	4,072,000	2,395	4,398,000	2,587	5,086,000	2,992
Midwest	3,721,714	7,953	3,806,000	8,133	3,870,000	8,270	3,977,000	8,499	4,274,000	9,134	4,942,500	10,562
South	11,317,286	442	11,693,000	457	12,179,000	475	12,744,000	498	13,893,000	542	16,151,500	631
West	5,480,571	4,419	5,692,000	4,589	5,971,000	4,814	6,279,000	5,062	6,873,000	5,541	8,041,000	6,483
SW Canada	933,505	7,511	973,286	7,832	1,047,404	8,428	1,120,893	9,019	1,256,852	10,113	1,475,299	11,871
Total		44,185		45,364		46,714		48,460		52,610		61,132

TABLE IV-12 (Continued)

PEAK DAILY SEASONAL POPULATION IN MOBILE HOMES
FROM DOMESTIC & CANADIAN SOURCES
1992 - 2040

Region/State	2020 Population over 65	2020 Maricopa Visitors	2025 Population over 65	2025 Maricopa Visitors	2030 Population over 65	2030 Maricopa Visitors	2035 Population over 65	2035 Maricopa Visitors	2040 Population over 65	2040 Maricopa Visitors
Minnesota	862,000	9,355	927,000	10,060	992,000	10,766	1,057,000	11,471	1,122,000	12,176
Iowa	624,000	6,315	670,000	6,781	716,000	7,247	762,000	7,712	808,000	8,178
Wisconsin	1,009,000	5,948	1,084,000	6,390	1,159,000	6,832	1,234,000	7,275	1,309,000	7,717
Illinois	2,262,000	5,329	2,433,000	5,732	2,604,000	6,135	2,775,000	6,538	2,946,000	6,941
Michigan	1,818,000	5,542	1,955,250	5,960	2,092,500	6,379	2,229,750	6,797	2,367,000	7,215
Northeast	5,774,000	3,396	6,201,000	3,648	6,628,000	3,899	7,055,000	4,150	7,482,000	4,401
Midwest	5,611,000	11,991	6,023,750	12,873	6,436,500	13,755	6,849,250	14,637	7,262,000	15,519
South	18,410,000	719	19,842,000	775	21,274,000	831	22,706,000	886	24,138,000	942
West	9,209,000	7,424	9,969,750	8,038	10,730,500	8,651	11,491,250	9,264	12,252,000	9,878
SW Canada	1,713,929	13,791	1,959,242	15,765	2,480,435	19,959	2,740,196	22,049	3,012,397	24,239
Total		69,811		76,022		84,453		90,780		97,207

TABLE IV-13

PEAK DAILY
SEASONAL POPULATION IN RECREATIONAL VEHICLES
MARICOPA COUNTY
1990 - 2040

| Year | Spaces | | | Seasonal Population |
	Inventory	Occupied	Seasonal	
1990	32,523	30,897	26,262	52,525
1992	33,924	30,532	25,036	50,072
1995	34,829	31,346	25,704	51,407
2000	35,865	32,279	26,469	52,937
2005	37,205	33,484	27,457	54,914
2010	40,391	36,352	29,809	59,617
2015	46,934	42,241	34,638	69,275
2020	53,598	48,238	39,555	79,110
2025	58,366	52,529	43,074	86,148
2030	64,838	58,354	47,851	95,701
2035	69,696	62,726	51,436	102,871
2040	74,630	67,167	55,077	110,154

Sources:

Arizona State University, Center for Business Research.
Bureau of Economic Analysis, Regional Projections to 2040.
United Nations Department of International Economics &
   Social Affairs, World Population Prospects, 1990.
Economic Strategies Group, 1993.

TABLE IV-14

PEAK DAILY SEASONAL POPULATION IN RECREATIONAL VEHICLES
FROM DOMESTIC & CANADIAN SOURCES
1992 - 2040

Region/State	1992 Population over 65	1992 Maricopa Visitors	1995 Population over 65	1995 Maricopa Visitors	2000 Population over 65	2000 Maricopa Visitors	2005 Population over 65	2005 Maricopa Visitors	2010 Population over 65	2010 Maricopa Visitors	2015 Population over 65	2015 Maricopa Visitors
Minnesota	570,000	7,010	582,000	7,158	592,000	7,281	608,000	7,477	654,000	8,043	758,000	9,322
Iowa	436,571	5,007	442,000	5,069	441,000	5,058	447,000	5,127	476,000	5,459	550,000	6,308
Wisconsin	674,571	4,506	688,000	4,596	698,000	4,663	716,000	4,783	768,000	5,130	889,000	5,938
Illinois	1,500,286	4,006	1,532,000	4,091	1,556,000	4,155	1,597,000	4,264	1,716,000	4,582	1,989,000	5,311
Michigan	1,159,571	4,006	1,193,000	4,121	1,227,000	4,239	1,273,000	4,398	1,380,000	4,767	1,599,000	5,524
Northeast	3,755,714	2,504	3,846,000	2,564	3,940,000	2,627	4,072,000	2,715	4,398,000	2,932	5,086,000	3,391
Midwest	3,721,714	9,014	3,806,000	9,217	3,870,000	9,372	3,977,000	9,631	4,274,000	10,350	4,942,500	11,969
South	11,317,286	500	11,693,000	517	12,179,000	538	12,744,000	563	13,893,000	614	16,151,500	714
West	5,480,571	5,007	5,692,000	5,200	5,971,000	5,455	6,279,000	5,736	6,873,000	6,278	8,041,000	7,345
SW Canada	933,505	8,513	973,286	8,875	1,047,404	9,551	1,120,893	10,221	1,256,852	11,460	1,475,299	13,452
Total		50,072		51,407		52,937		54,914		59,617		69,275

TABLE IV-14 (Continued)

PEAK DAILY SEASONAL POPULATION IN RECREATIONAL VEHICLES
FROM DOMESTIC & CANADIAN SOURCES
1992 - 2040

Region/State	2020 Population over 65	2020 Maricopa Visitors	2025 Population over 65	2025 Maricopa Visitors	2030 Population over 65	2030 Maricopa Visitors	2035 Population over 65	2035 Maricopa Visitors	2040 Population over 65	2040 Maricopa Visitors
Minnesota	862,000	10,601	927,000	11,400	992,000	12,200	1,057,000	12,999	1,122,000	13,799
Iowa	624,000	7,157	670,000	7,684	716,000	8,212	762,000	8,739	808,000	9,267
Wisconsin	1,009,000	6,740	1,084,000	7,241	1,159,000	7,742	1,234,000	8,243	1,309,000	8,744
Illinois	2,262,000	6,040	2,433,000	6,496	2,604,000	6,953	2,775,000	7,410	2,946,000	7,866
Michigan	1,818,000	6,281	1,955,250	6,755	2,092,500	7,229	2,229,750	7,703	2,367,000	8,177
Northeast	5,774,000	3,850	6,201,000	4,134	6,628,000	4,419	7,055,000	4,704	7,482,000	4,988
Midwest	5,611,000	13,588	6,023,750	14,588	6,436,500	15,587	6,849,250	16,587	7,262,000	17,586
South	18,410,000	814	19,842,000	877	21,274,000	940	22,706,000	1,004	24,138,000	1,067
West	9,209,000	8,412	9,969,750	9,107	10,730,500	9,802	11,491,250	10,497	12,252,000	11,192
SW Canada	1,713,929	15,628	1,959,242	17,865	2,480,435	22,617	2,740,196	24,986	3,012,397	27,468
Total		79,110		86,148		95,701		102,871		110,154

Sources:

Bureau of Economic Analysis, Regional Projections to 2040, 1990.
United Nations Department of International Economics & Social Affairs, World Population Prospects, 1990.
Economic Strategies Group, 1993.

TABLE IV-15

PEAK DAILY
SEASONAL POPULATION QUARTERED IN OTHER HOUSING
MARICOPA COUNTY
1990-2040

Year	Total Housing	Total Seasonal Housing	Mobile Home Seasonal Housing	Other Seasonal Housing	Other Seasonal Population
1990	952,041	56,220	21,818	34,402	68,804
1995	1,076,699	63,581	22,682	40,899	81,799
2000	1,222,020	72,163	23,357	48,806	97,612
2005	1,367,652	80,763	24,230	56,533	113,065
2010	1,520,562	89,792	26,305	63,487	126,975
2015	1,687,439	99,647	30,566	69,081	138,162
2020	1,869,677	110,408	34,906	75,503	151,006
2025	2,064,294	121,901	38,011	83,890	167,780
2030	2,265,371	133,775	42,227	91,548	183,097
2035	2,470,169	145,869	45,390	100,479	200,957
2040	2,674,486	157,934	48,604	109,330	218,661

Sources:
  Maricopa Association of Governments, 1993.
  United States Bureau of the Census, 1990.
  Economic Strategies Group, 1993.

TABLE IV-16

WORKERS & POPULATION PER HOUSEHOLD
BY INCOME QUINTILE
MARICOPA COUNTY, ARIZONA
1990

Income Quintile	Sample Data			Household Characteristics	
	Households	Population	Workers	Population	Workers
$1 - $15,000	7,457	15,376	4,446	2.06	0.60
$15,001 - $25,000	6,732	15,581	6,649	2.31	0.99
$25,001 - $35,000	6,158	16,359	7,718	2.66	1.25
$35,001 - $50,000	7,138	20,952	10,863	2.94	1.52
$50,000 and Up	9,526	29,626	16,882	3.11	1.77
Total	37,011	97,894	46,558	2.64	1.26

Source: U.S. Department of Commerce, Bureau of the Census,
1990 Census of Population and Housing, Public Use Microdata Sample (PUMS).

TABLE IV-17

WORKERS PER HOUSEHOLD BY INCOME CLASS AND SECTOR
MARICOPA COUNTY, 1990

Industry Group	Workers by Household Income Quintile				
	$1 - $15,000	$15,001 - $25,000	$25,001 - $35,000	$35,001 - $50,000	$50,000 and Up
Agriculture	22.1%	21.2%	19.2%	16.8%	20.8%
Mining	5.7%	13.2%	13.2%	22.6%	45.3%
Construction	10.1%	16.8%	18.1%	24.9%	30.0%
Manufacturing (Non-durable)	9.4%	16.5%	19.1%	23.1%	32.0%
Manufacturing (Durable)	5.2%	11.4%	15.1%	26.4%	41.9%
Transportation	7.0%	12.1%	17.6%	26.0%	37.2%
Communications	5.2%	10.0%	13.6%	26.4%	44.9%
Utilities	3.6%	5.9%	11.8%	27.3%	51.4%
Wholesale (Durable)	9.0%	13.4%	17.0%	24.0%	36.6%
Wholesale (Non-durable)	8.6%	11.2%	18.7%	25.3%	36.2%
Retail Trade	13.1%	16.4%	18.2%	22.2%	30.2%
F.I.R.E.	6.6%	13.2%	15.7%	21.3%	43.2%
Bus. & Personal Services	16.0%	18.3%	17.1%	20.6%	28.0%
Entertainment	11.7%	17.9%	15.1%	23.7%	31.6%
Prof. Services	8.1%	12.3%	15.2%	23.4%	41.0%
Government (Ex. Military)	5.2%	12.2%	16.2%	24.8%	41.5%
Total	9.5%	14.2%	16.5%	23.3%	36.4%

Source: U.S. Department of Commerce, Bureau of the Census,
1990 Census of Population and Housing, Public Use Microdata Sample (PUMS).

TABLE IV-18

RETIREMENT POPULATION
BY INCOME CATEGORY
MARICOPA COUNTY, ARIZONA
1990

Income Category	Sample Data				Population per Household
	Households	Share	Population	Share	
$1 - $15,000	2,888	42.9%	4,121	36.3%	1.43
$15,001 - $25,000	1,666	24.8%	2,978	26.2%	1.79
$25,001 - $35,000	911	13.5%	1,740	15.3%	1.91
$35,001 - $50,000	655	9.7%	1,302	11.5%	1.99
$50,000 and Up	611	9.1%	1,215	10.7%	1.99
Total	6,731	100.0%	11,356	100.0%	1.69

Source: U.S. Department of Commerce, Bureau of the Census,
1990 Census of Population and Housing, Public Use Microdata Sample (PUMS).

TABLE IV-19

RETIREMENT POPULATION
BY INCOME CATEGORY
MARICOPA COUNTY, ARIZONA
1990 - 2040
(1990 Dollars)

Year	$1 - $15,000	$15,001 - $25,000	$25,001 - $35,000	$35,001 - $50,000	$50,000 and Up	Total
1990	96,260	69,561	40,643	30,413	28,380	265,257
1995	105,858	76,497	44,696	33,445	31,210	291,707
2000	111,537	80,601	47,094	35,239	32,884	307,355
2005	117,121	84,636	49,452	37,004	34,531	322,744
2010	129,034	93,245	54,482	40,767	38,043	355,571
2015	151,540	109,509	63,984	47,878	44,679	417,589
2020	180,764	130,627	76,323	57,111	53,295	498,120
2025	220,891	159,625	93,266	69,789	65,126	608,697
2030	265,680	191,991	112,177	83,940	78,331	732,118
2035	296,532	214,286	125,204	93,687	87,427	817,135
2040	314,301	227,127	132,707	99,301	92,666	866,102

Population by Income Quintile

Source: U.S. Department of Commerce, Bureau of the Census,
1990 Census of Population and Housing, Public Use Microdata Sample (PUMS).

TABLE IV-20

UNEMPLOYMENT RATES BY SECTOR
MARICOPA COUNTY, 1990

Industry Group	Labor Force			Unemp. Rate
	Total	Employed	Unemployed	
Agriculture	998	896	102	10.2%
Mining	66	55	11	16.7%
Construction	3,215	2,898	317	9.9%
Manufacturing (Non-durable)	1,791	1,697	94	5.2%
Manufacturing (Durable)	5,519	5,253	266	4.8%
Transportation	2,215	2,134	81	3.7%
Communications	811	777	34	4.2%
Utilities	774	757	17	2.2%
Wholesale (Durable)	1,281	1,215	66	5.2%
Wholesale (Non-durable)	922	872	50	5.4%
Retail Trade	8,924	8,233	691	7.7%
F.I.R.E.	4,380	4,218	162	3.7%
Bus. & Personal Services	5,179	4,800	379	7.3%
Entertainment	783	727	56	7.2%
Prof. Services	10,237	9,945	292	2.9%
Government (Ex. Military)	2,160	2,102	58	2.7%
Military	445	433	12	2.7%
Total	49,700	47,012	2,688	5.4%

Source: U.S. Department of Commerce, Bureau of the Census,
1990 Census of Population and Housing, Public Use Microdata Sample (PUMS).

TABLE IV-21

RESIDENTIAL VACANCY RATES BY UNIT TYPE
BASED ON A 5 PERCENT SAMPLE OF CENSUS HOUSEHOLD RECORDS
MARICOPA COUNTY AND PUBLIC USE MICRODATA AREAS
1990

Area / Vacancy Status	Housing Units by Type					Total Housing Units
	SF_Det	SF_Att	MF	Mobile	Other	
Metro						
Occupied	23,174	2,621	8,852	2,556	264	37,467
For Rent	355	126	2,438	184	50	3,153
For Sale	726	193	96	101	7	1,123
Rented/Sold Vac.	189	63	60	99	4	415
Seasonal/Rec.	551	234	263	997	40	2,085
For Migratory	4	1	3	3		11
Other Vacant	368	79	240	135	154	976
Vacancy Rate *	**5.20%**	**12.72%**	**22.66%**	**13.06%**	**18.77%**	**11.13%**
PUMA 1.01						
Occupied	1,598	81	327	91	12	2,109
For Rent	15	4	95	5		119
For Sale	46	7	4	3		60
Rented/Sold Vac.	8	3	4	3		18
Seasonal/Rec.	8		7	26	4	45
Other Vacant	12	1	4		1	18
Vacancy Rate *	**4.14%**	**14.74%**	**23.95%**	**10.78%**	**0.00%**	**8.54%**
PUMA 1.02						
Occupied	1,329	69	391	243	7	2,039
For Rent	14	3	109	6	1	133
For Sale	48	10	3	12		73
Rented/Sold Vac.	11		0	3		14
Seasonal/Rec.	5	4	9	10		28
Other Vacant	15	3	5	9	4	
Vacancy Rate *	**5.21%**	**15.85%**	**22.27%**	**7.95%**	**12.50%**	**9.74%**
PUMA 1.03						
Occupied	1,572	147	516	58	7	2,300
For Rent	27	9	132	1	2	171
For Sale	39	14	5	3		61
Rented/Sold Vac.	13	1	1	2		17
Seasonal/Rec.	4	2	9	1	1	17
Other Vacant	17	4	17	2	7	47
Vacancy Rate *	**4.78%**	**14.04%**	**21.10%**	**9.38%**	**22.22%**	**9.77%**
PUMA 1.04						
Occupied	1,144	171	991	44	21	2,371
For Rent	24	10	287	3	1	325
For Sale	33	11	6	1		51
Rented/Sold Vac.	12	5	8	1	1	27
Seasonal/Rec.	7	2	3	1		13
Other Vacant	21	2	20	2	10	55
Vacancy Rate *	**5.69%**	**13.20%**	**23.30%**	**10.20%**	**8.70%**	**14.53%**

TABLE IV-21 (Continued)

RESIDENTIAL VACANCY RATES BY UNIT TYPE
BASED ON A 5 PERCENT SAMPLE OF CENSUS HOUSEHOLD RECORDS
MARICOPA COUNTY AND PUBLIC USE MICRODATA AREAS
1990

Area /	Housing Units by Type					Total
Vacancy Status	SF_Det	SF_Att	MF	Mobile	Other	Housing Units
PUMA 1.05						
Occupied	1,397	104	310	21	12	1,844
For Rent	19	10	101		2	132
For Sale	45	8	8			61
Rented/Sold Vac.	11	3	0			14
Seasonal/Rec.	6		5			11
Other Vacant	19	2	5		2	28
Vacancy Rate *	**5.10%**	**16.80%**	**26.01%**	**0.00%**	**14.29%**	**10.09%**
PUMA 1.06						
Occupied	1,491	150	817	27	19	2,504
For Rent	18	8	219	5	2	252
For Sale	44	7	3			54
Rented/Sold Vac.	9	6	9	1		25
Seasonal/Rec.	24	5	12		1	42
Other Vacant	25	3	15	1	13	57
Vacancy Rate *	**4.55%**	**12.28%**	**22.04%**	**18.18%**	**9.52%**	**11.68%**
PUMA 1.07						
Occupied	1,033	44	346	152	20	1,595
For Rent	47	4	121	18	3	193
For Sale	45		2	2		49
Rented/Sold Vac.	12	1	1	1	1	16
Seasonal/Rec.	1		1	4		6
Other Vacant	28	2	21	10	7	68
Vacancy Rate *	**9.15%**	**10.20%**	**26.38%**	**12.14%**	**16.67%**	**13.92%**
PUMA 1.08						
Occupied	1,048	101	539	91	28	1,807
For Rent	55	7	177	21	4	264
For Sale	21	13	4	2		40
Rented/Sold Vac.	10	2	10			22
Seasonal/Rec.	1		2	3	3	9
For Migratory			1			1
Other Vacant	41	7	30	5	14	97
Vacancy Rate *	**7.58%**	**17.89%**	**26.16%**	**20.18%**	**12.50%**	**15.28%**
PUMA 1.09						
Occupied	1,074	138	169	284	14	1,679
For Rent	32	5	55	65	16	173
For Sale	33	3	1	9	1	47
Rented/Sold Vac.	24	5	4	21		54
Seasonal/Rec.	60	20	7	21	5	113
For Migratory	3		2	2		7
Other Vacant	33	2	11	49	44	139
Vacancy Rate *	**7.65%**	**8.61%**	**26.20%**	**25.07%**	**54.84%**	**14.03%**

TABLE IV-21 (Continued)

RESIDENTIAL VACANCY RATES BY UNIT TYPE
BASED ON A 5 PERCENT SAMPLE OF CENSUS HOUSEHOLD RECORDS
MARICOPA COUNTY AND PUBLIC USE MICRODATA AREAS
1990

Area / Vacancy Status	Housing Units by Type					Total Housing Units
	SF_Det	SF_Att	MF	Mobile	Other	
PUMA 1.10						
Occupied	1,603	309	318	163	19	2,412
For Rent	17	9	76	11	1	114
For Sale	66	31	9	8	1	115
Rented/Sold Vac.	12	8	1	4		25
Seasonal/Rec.	84	41	34	21	4	184
Other Vacant	27	13	7	13	20	80
Vacancy Rate *	**5.59%**	**13.45%**	**21.29%**	**12.37%**	**9.52%**	**9.53%**
PUMA 1.11						
Occupied	1,505	135	656	216	21	2,533
For Rent	10	4	169	13	10	206
For Sale	60	12	4	6	1	83
Rented/Sold Vac.	15	3	2	4		24
Seasonal/Rec.	7	1	6	11		25
Other Vacant	14	1	14	2	17	48
Vacancy Rate *	**5.35%**	**12.34%**	**21.06%**	**9.62%**	**34.38%**	**11.00%**
PUMA 1.12						
Occupied	2,064	433	780	98	23	3,398
For Rent	18	15	170	2	2	207
For Sale	66	43	21	6		136
Rented/Sold Vac.	17	7	8	1		33
Seasonal/Rec.	114	120	91	27	3	355
Other Vacant	30	19	24	9	5	87
Vacancy Rate *	**4.67%**	**13.05%**	**20.33%**	**8.41%**	**8.00%**	**9.96%**
PUMA 1.13						
Occupied	1,417	287	839	120	22	2,685
For Rent	10	6	168	2	1	187
For Sale	25	5	5	4	3	42
Rented/Sold Vac.	5	1	4			10
Seasonal/Rec.	6	5	6	5	3	25
Other Vacant	10	1	20	9	6	46
Vacancy Rate *	**2.75%**	**4.01%**	**17.42%**	**4.76%**	**15.38%**	**8.17%**
PUMA 1.14						
Occupied	1,881	235	1,254	265	19	3,654
For Rent	20	18	364	10	2	414
For Sale	45	17	14	12		88
Rented/Sold Vac.	11	5	7	41	2	66
Seasonal/Rec.	43	8	39	279		369
For Migratory			0	1		1
Other Vacant	19	2	28	7	2	58
Vacancy Rate *	**3.88%**	**14.55%**	**23.49%**	**19.21%**	**17.39%**	**13.45%**

TABLE IV-21 (Continued)

RESIDENTIAL VACANCY RATES BY UNIT TYPE
BASED ON A 5 PERCENT SAMPLE OF CENSUS HOUSEHOLD RECORDS
MARICOPA COUNTY AND PUBLIC USE MICRODATA AREAS
1990

| Area / | Housing Units by Type | | | | | Total |
Vacancy Status	SF_Det	SF_Att	MF	Mobile	Other	Housing Units
PUMA 1.15						
Occupied	1,375	82	171	552	12	2,192
For Rent	18	8	74	17	3	120
For Sale	46	6	4	27	1	84
Rented/Sold Vac.	8	4	1	17		30
Seasonal/Rec.	147	20	23	562	15	767
For Migratory	1		0			1
Other Vacant	28	2	6	16		52
Vacancy Rate *	**4.98%**	**18.00%**	**31.60%**	**9.95%**	**25.00%**	**9.65%**
PUMA 1.16						
Occupied	1,643	135	428	131	8	2,345
For Rent	11	6	121	5		143
For Sale	64	6	3	6		79
Rented/Sold Vac.	11	9	0			20
Seasonal/Rec.	34	6	9	26	1	76
For Migratory		1	0			1
Other Vacant	29	15	13	1	2	60
Vacancy Rate *	**4.97%**	**13.46%**	**22.46%**	**7.75%**	**0.00%**	**9.35%**

Sources:

U.S. Bureau of the Census, Public Use Microdata Sample - Arizona, 1990.
Economic Strategies Group, 1993.

* Vacancy rates reflect vacant "For Sale", "For Rent", and "Sold/Rented" housing units only.

V. EMPLOYMENT DATABASE

1.0 INTRODUCTION

The Maricopa Association of Governments (MAG) requires information on areas of traffic generation to assist in their transportation planning and trip reduction efforts. This working paper and its associated materials have been prepared to identify and inventory major employers in Maricopa County, and will include a description of the data collection efforts involved and the resulting database file.

1.1 DEFINITIONS

Major employers were defined as those employers, in the public or private sector, with 50 or more employees at a site. The information is site specific; in cases where an employer had multiple sites, they are reported separately. Restaurant and convenience store franchises were not included due to the lack of site-specific information.

While the focus of this data collection effort was employment sites with 50 or more employees, there were sites included with fewer than 50 employees. In some cases, verification of secondary data showed fewer than 50 employees. In other cases, certain sites within a group of related sites contained fewer than 50 employees. It was decided in such cases to retain the information on those sites, considering that in the future additional employment may occur at those sites.

2.0 EMPLOYMENT DATA COLLECTION

Initial data collection efforts involved acquiring database files from MAG (six files with 1,826 records) and Claritas National Planning Data Company (one file with 2,891 records).

These database files were combined to form a single database of 4,717 employer site records. Multiple sorts on company name and address fields were performed to identify and mark duplicate records for deletion. Actual deletions were not executed until a determination was made regarding which records had the more accurate and/or recent information.

Information obtained from Claritas provided an estimated range of the number of employees at each company listed but no specific number. For the approximately 1400 companies where other verification sources were unavailable, telephone contacts were made to obtain specific employment information and to verify address. These calls were made over a three week period in December 1992 and January 1993.

For chain-store operations, such as grocery stores, site information was obtained through U.S. West telephone directories. Employment information for those companies was obtained through a representative sampling of individual sites from the companies' various

metropolitan Phoenix locations, with the resulting average applied to the remaining company facilities.

Other sources utilized to verify information or to add additional sites include:

- 1991 Arizona Industrial Directory, for information about employment in manufacturing firms.

- Arizona Department of Education, for information about employment in public schools.

- Arizona Department of Commerce, for information about employment by state agencies.

- The Business Journal, Book of Lists.

Throughout the data collection and verification process, local newspapers and business periodicals were referred to regarding facility openings, closings, or changes in employment.

A draft of the information collected was delivered to MAG, who in turn provided member agencies with the site employment information pertaining to their cities. These MAG member agencies reviewed the information and compared it to their own sources. Recommendations for changes, additions, and deletions were received from the cities of Phoenix, Glendale, Chandler, Peoria, Goodyear, and Buckeye. These revisions were then incorporated into the database of information.

3.0 EMPLOYMENT DATABASE RESULTS

The data collection effort outlined above resulted in a database of 3,018 employment sites with a total of 488,431 employees. This employment count is shown on Table V-1, grouped by MPA (Metropolitan Planning Area). This is 48.51 percent of the total civilian employment or 48.95 percent of the total wage and salary employment for Maricopa County as of June, 1993 as per the Arizona Department of Economic Security Research Administration report <u>Maricopa Labor Force and Employment in 1993</u>.

Of the total employees contained in this database of major employers, 92.57% were in six MPA's:

MPA	Percent of Total Employees
Phoenix	55.82
Tempe	9.93
Mesa	8.70
Scottsdale	8.04
Glendale	5.97
Chandler	4.11
	92.57

Figure V-1 shows the names of fields contained in the employment database and a description of the information contained in the fields. In addition to fields for company name and address, and number of employees, this database contains fields to identify the original source of the record information, the company's Standard Industrial Classification, and seven fields to store locational information for various geographic regions. Figure V-2 shows descriptions of the various codes used in certain fields of the database.

4.0 EMPLOYMENT/LAND USE MATRICES

This working paper and its associated materials have been prepared to measure the propensity of industries to utilize certain land use types. The research analysis involved in the performance of this study has been conducted at a detailed scale and then aggregated into a more concisely defined final matrix.

This report will include a description of the data sources utilized in the development of an information base, the methodology used to develop aggregated matrices, and the resulting employment-to-land use correlation matrix.

4.1 DATA SOURCES

Land use types utilized for this study were obtained from the Maricopa Association of Governments, General Plan Land Use Codes, MPA "MAGHIGH." The MAG land use codes were aggregated into nine general categories as follows:

- Hotel = Hotel/Motel
  Resort

- Retail = Neighborhood Retail
  Community Retail
  Regional Retail
  Strip Retail
  General Commercial

- Office = Small Office
  Large Office
  Medical Office

- Industrial = Industrial/Business Park
  Manufacturing
  Warehouse

- Hospital = Hospitals

- Utilities = Public Utilities

- School = Schools

- Government = Government/Municipal

FIGURE V-1

Record Description
Final Employment Database
MAG Socioeconomic Models Enhancement Project

Field Name	Description
RECID	Record identification number
LASTUPDATE	Last record update
DATABASE	Original source of record
DISP	Record handling flag
DRFLAG	Temporary Use Handling Flag
SICCODE	Standard industrial classification
SIC/EXPAND	Standard industrial classification, to 2 decimal places
COMPANY	Company name
ADDRESS	Company address
SUITE	Suite number/letter
CITY	City
STATE	State
ZIPCODE	Zipcode
PHONE	Company telephone number
SITES	Employment sites
EMPTOTAL	Total current part-time and full-time employment
EMPOUT	Number of employees generally working outside the office/location
ESTBAS	Estimate basis code (1)
EMPCODE	Claritas employment size-range code
TOTBEDS	Total beds (hospitals and nursing homes)
RESBEDS	Total beds used as group quarters (hospitals and nursing homes)
MPA	Metropolitan Planning Area
TAZ	Traffic Analysis Zone
PMHS	Phoenix Metropolitan Housing Study code
RAZ	Regional Analysis Zone
REGN	MAG Region Code
X COORD	"X" Coordinate (Arizona Central State Plane System)
Y COORD	"Y" Coordinate (Arizona Central State Plane System)

(1) In some cases it was necessary to estimate EMPTOTAL. This code indicates the basis for that estimate.

FIGURE V-2

Database Codes
Final Employment Database
MAG Socioeconomic Models Enhancement Project

Field/Value	Code Description		

DATABASE — Original source of record

Code	Source	Count	Employment
MAGR	MAG Employment Database	314	64,796
EMPL	Trip Reduction Database	270	91,719
SITE	Trip Reduction Database	344	129,975
CSIT	Trip Reduction Database	13	1,530
CEMP	Trip Reduction Database	3	976
MAGX	MAG Employment Database	3	7,180
DEED	Arizona Department of Education	81	6,390
NATA	Claritas NPDC	1,799	160,065
BUSJ	Phoenix Business Journal	21	1,472
MISC	Phonebook, Newspapers, other	63	8,210
DOCM	Arizona Department of Commerce	87	14,186
GLEN	City of Glendale	12	1,222
PEOR	City of Peoria	5	265
GOOD	City of Goodyear	1	150
BUCK	Town of Buckeye	2	295
Total		**3,018**	**488,431**

DISP — Original handling of record

Code	Handling
M	Best record for employer based on analysis of Trip Reduction and MAG Employment databases.
C	Call (All records from Claritas NPDC not verifiable through another source, plus selected others.)
S	Solvable - Obtain data from central and/or general source.
P	Problems - In-depth investigation of the record.

SIC — Standard industrial classification as per the 1987 manual produced by the U.S. Office of Management & Budget - Generally a four digit integer indicating the industry in which the employer is involved. Records from Claritas NPDC contain an extra two digits of industrial detail expressed as two decimal places.

ESTBAS — Basis for estimates of employment code

Code	Description
None	Actual employment.
1	Estimate based on Claritas NPDC size ranges (as described below).
2	Estimate based on information from secondary source.
3	Estimate based on sampling of other (store) locations.

FIGURE V-2 (Continued)

Database Codes
Final Employment Database
MAG Socioeconomic Models Enhancement Project

Field/Value	Code Description
EMPCODE	Claritas employment size-range code

Code	Employment
E	50-99
F	100-249
G	250-499
H	500-999
I	1,000-4,999
J	5,000-9,999
K	10,000 +

TOTBEDS	Total number of beds if record is for a nursing home or hospital.
RESBEDS	Number of nursing home or hospital beds used as a group quarters residence.

Source: Economic Strategies Group, 1993.

TABLE V-1

Database Coverage
Final Employment Database
MAG Socioeconomic Models Enhancement Project

MPA	Count	Employees	Share of Total
Avondale	12	1,205	0.25%
Buckeye	7	889	0.18%
Carefree	2	135	0.03%
Chandler	122	20,084	4.11%
Maricopa County	59	10,729	2.20%
El Mirage	4	328	0.07%
Fountain Hills	11	723	0.15%
Gila Bend	2	92	0.02%
Greater Chandler	7	785	0.16%
Gilbert	44	4,650	0.95%
Glendale	153	29,165	5.97%
Goodyear	20	3,592	0.74%
Guadalupe	3	155	0.03%
Litchfield Park	2	654	0.13%
Mesa	246	42,515	8.70%
Paradise Valley	15	2,905	0.59%
Peoria	45	5,425	1.11%
Phoenix	1,711	272,643	55.82%
Queen Creek	1	87	0.02%
Scottsdale	239	39,258	8.04%
Surprise	8	539	0.11%
Tempe	282	48,518	9.93%
Tolleson	11	2,269	0.46%
Wickenburg	10	831	0.17%
Youngtown	2	255	0.05%
Total	3,018	488,431	100.00%

Source: Economic Strategies Group, 1993.

- Other   = Residential
                   Agricultural
                   Vacant/Non-developable
                   Golf courses
                   Green belts
                   Mixed use

A tenth code, "None," was added to compensate for those industries or occupations where a specific land assignment was not feasible. This situation is most common in occupations such as transportation and the construction trades, where employment is job or task driven rather than land use based.

Information on occupation types and industry classifications was obtained from the U.S. Bureau of Labor Statistics (National OES Matrices for 1990-2005). This data file lists 620 occupations in 260 industries at detailed and summary levels.

4.2   DATA ANALYSIS

The initial step of the analysis effort consisted of examining each of the occupational categories listed in the Bureau of Labor Statistics matrices and determining in which of the ten land use types such an occupation could reasonably be expected to be present. In some cases, it was determined that a person in a given occupation might be found in more than one of the land use categories. For these cases, scores on a scale of 1 to 5 were assigned to each land use category, modeling the propensity of the occupation to exist in one land use category more, or less, than another.

The list of industries from the Bureau of Labor Statistics matrices was aggregated, using both summary and detailed data, to match, as closely as possible, the industry classifications used by the Arizona Department of Economic Security for compiling labor force and employment statistics. The use of both summary and detailed data ensured that all industry classifications were represented.

Table V-2 shows the results, in number of workers by industry and land use. These numbers were obtained by multiplying the number of workers of each detailed occupation type and aggregated industry classification by the percentage assigned to each land use category.

The results of Table V-2 were converted into percentages in Table V-3 by dividing the number of employees per land use by the total in that industry classification.

It was understood that while certain occupation types could be present in multiple, or all, land use types, they would not necessarily be represented equally in each. Given the size of the data set used to derive the occupation/industry by land use matrix, and the fact that some U.S. industries would have minimal or no presence in Maricopa County, such a matrix would be skewed to some extent toward a national mix of industries and their land use patterns.

In order to compensate for such over- or under-representation, and to make the resulting matrix more localized in scope, the Table V-3 industries were examined and compared to their land use types with attention to local development practices and uses. When a determination was made that an industry's presence in a particular land use was minimal, those land use percentages were changed to 0.00 and reallocated proportionally to the remaining land uses. The results of this analysis and the resulting reallocation is shown in Table V-4.

TABLE V-2
U.S. Employment by Industry and Land Use
Number of Workers 1990

Industry	Hotel	Retail	Office	Industrial	Hospital	Utilities	School	Gov't	Other	None
All Industries	6,306,157	15,853,914	13,034,682	23,686,612	7,340,272	5,349,131	13,593,683	13,254,157	4,127,994	9,506,820
Mining	19,742	25,586	45,294	252,308	23,955	38,205	39,352	43,995	125,492	61,086
Construction	114,121	142,945	198,183	1,138,853	117,518	156,516	162,318	168,535	17,808	2,919,026
Manufacturing	453,415	823,622	1,309,894	12,149,339	543,904	701,488	860,597	944,177	122,721	1,201,845
Durable Goods	264,466	413,781	731,976	7,061,204	323,224	411,330	563,922	607,358	82,221	655,913
Stone, Clay, & Glass	9,781	18,475	22,261	336,563	10,881	15,713	13,813	17,903	1,188	110,448
Primary & Fabricated Metals	44,504	69,091	97,552	1,541,125	50,697	61,940	69,333	75,642	3,580	164,823
Machinery & Equipment	57,368	92,688	165,737	1,284,763	73,847	91,495	127,705	132,407	1,511	66,546
Nondurable Goods	188,948	409,842	577,904	5,088,125	220,677	290,157	296,661	336,806	40,500	545,932
Food & Kindred	36,824	78,957	74,179	1,072,125	42,608	49,515	48,343	54,484	20,367	190,295
Printing & Publishing	52,914	143,491	249,960	748,987	57,583	70,539	76,868	94,199	11,301	67,748
Transportation & Utilities	198,375	474,010	543,263	1,235,510	236,353	368,927	317,853	643,981	25,855	1,781,911
Transportation	104,170	315,419	240,424	826,217	124,373	111,192	116,814	416,621	10,950	1,279,061
Communication & Utilities	93,146	157,532	301,752	408,216	110,911	256,648	199,952	226,273	14,905	502,848
Trade	2,458,257	9,960,738	2,239,394	3,196,299	1,403,458	1,184,509	1,797,812	2,095,210	314,972	1,231,456
Wholesale Trade	280,525	1,369,561	1,049,498	1,376,437	313,175	329,744	339,951	387,847	80,390	675,333
Retail Trade	2,177,732	8,592,356	1,189,885	1,810,009	1,090,281	854,765	1,457,826	1,707,330	234,581	556,123
Gen'l Merchandise & Apparel	109,837	2,291,210	331,185	237,024	162,320	159,674	167,834	208,049	3,179	18,668
Food Stores	133,526	1,306,351	162,147	498,038	258,890	240,555	285,507	301,766	2,359	38,481
Automotive	59,720	613,881	178,125	467,130	100,861	99,556	101,088	232,410	185,254	65,504
Eating & Drinking	1,739,333	2,551,364	85,908	187,842	305,039	148,114	688,580	684,940	2,478	153,202
Finance, Insurance, Real Estate	414,963	494,936	2,698,860	505,127	473,394	468,324	481,717	686,179	93,872	229,042
Services	2,202,376	3,427,911	4,807,417	3,843,733	3,829,759	1,807,215	9,073,915	5,321,495	1,942,986	1,209,721
Hotels & Lodging	441,891	350,275	106,429	139,484	117,177	94,182	146,241	157,212	21,015	66,019
Business	395,597	583,836	763,748	1,119,382	497,984	468,764	517,467	589,139	91,614	175,144
Health	354,239	399,749	2,031,213	477,441	1,965,378	314,260	846,740	2,138,345	189,963	128,625
Education	311,969	397,250	419,396	408,621	467,347	290,295	5,856,212	774,750	64,076	442,148
Government	426,297	452,108	963,777	1,230,784	686,853	602,387	832,403	3,300,651	193,450	748,935
Federal (incl. Postal Service)	143,398	161,257	369,525	486,142	234,074	195,166	293,669	962,194	35,030	132,233
State & Local	275,756	283,698	587,113	707,079	445,626	358,216	531,552	2,207,554	156,918	417,577

TABLE V-3
U.S. Employment by Industry and Land Use
Percentage of Workers 1990

Industry	Hotel	Retail	Office	Industrial	Hospital	Utilities	School	Gov't	Other	None
All Industries	5.63%	14.15%	11.63%	21.14%	6.55%	4.77%	12.13%	11.83%	3.68%	8.48%
Mining	2.92%	3.79%	6.71%	37.38%	3.55%	5.66%	5.83%	6.52%	18.59%	9.05%
Construction	2.22%	2.78%	3.86%	22.17%	2.29%	3.05%	3.16%	3.28%	0.35%	56.84%
Manufacturing	2.37%	4.31%	6.85%	63.57%	2.85%	3.67%	4.50%	4.94%	0.64%	6.29%
Durable Goods	2.38%	3.72%	6.59%	63.53%	2.91%	3.70%	5.07%	5.46%	0.74%	5.90%
Stone, Clay, & Glass	1.76%	3.32%	4.00%	60.42%	1.95%	2.82%	2.48%	3.21%	0.21%	19.83%
Primary & Fabricated Metals	2.04%	3.17%	4.48%	70.75%	2.33%	2.84%	3.18%	3.47%	0.16%	7.57%
Machinery & Equipment	2.74%	4.43%	7.91%	61.35%	3.53%	4.37%	6.10%	6.32%	0.07%	3.18%
Nondurable Goods	2.36%	5.13%	7.23%	63.64%	2.76%	3.63%	3.71%	4.21%	0.51%	6.83%
Food & Kindred	2.21%	4.73%	4.45%	64.29%	2.55%	2.97%	2.90%	3.27%	1.22%	11.41%
Printing & Publishing	3.36%	9.12%	15.88%	47.60%	3.66%	4.48%	4.88%	5.99%	0.72%	4.31%
Transportation & Utilities	3.40%	8.14%	9.32%	21.21%	4.06%	6.33%	5.46%	11.05%	0.44%	30.59%
Transportation	2.94%	8.90%	6.78%	23.30%	3.51%	3.14%	3.29%	11.75%	0.31%	36.08%
Communication & Utilities	4.10%	6.93%	13.28%	17.97%	4.88%	11.30%	8.80%	9.96%	0.66%	22.13%
Trade	9.50%	38.49%	8.65%	12.35%	5.42%	4.58%	6.95%	8.10%	1.22%	4.76%
Wholesale Trade	4.52%	22.08%	16.92%	22.19%	5.05%	5.32%	5.48%	6.25%	1.30%	10.89%
Retail Trade	11.07%	43.68%	6.05%	9.20%	5.54%	4.35%	7.41%	8.68%	1.19%	2.83%
Gen'l Merchandise & Apparel	2.98%	62.11%	8.98%	6.43%	4.40%	4.33%	4.55%	5.64%	0.09%	0.51%
Food Stores	4.14%	40.47%	5.02%	15.43%	8.02%	7.45%	8.85%	9.35%	0.07%	1.19%
Automotive	2.84%	29.18%	8.47%	22.21%	4.79%	4.73%	4.81%	11.05%	8.81%	3.11%
Eating & Drinking	26.57%	38.97%	1.31%	2.87%	4.66%	2.26%	10.52%	10.46%	0.04%	2.34%
Finance, Insurance, Real Estate	6.34%	7.56%	41.23%	7.72%	7.23%	7.15%	7.36%	10.48%	1.43%	3.50%
Services	5.88%	9.15%	12.83%	10.26%	10.22%	4.82%	24.22%	14.20%	5.19%	3.23%
Hotels & Lodging	26.95%	21.36%	6.49%	8.51%	7.15%	5.74%	8.92%	9.59%	1.28%	4.03%
Business	7.60%	11.22%	14.68%	21.52%	9.57%	9.01%	9.95%	11.32%	1.76%	3.37%
Health	4.00%	4.52%	22.96%	5.40%	22.22%	3.55%	9.57%	24.17%	2.15%	1.45%
Education	3.31%	4.21%	4.45%	4.33%	4.95%	3.08%	62.09%	8.21%	0.68%	4.69%
Government	4.52%	4.79%	10.21%	13.04%	7.28%	6.38%	8.82%	34.97%	2.05%	7.94%
Federal (incl. Postal Service)	4.76%	5.35%	12.27%	16.14%	7.77%	6.48%	9.75%	31.94%	1.16%	4.39%
State & Local	4.62%	4.75%	9.83%	11.84%	7.46%	6.00%	8.90%	36.97%	2.63%	6.99%

Source:

TABLE V-4
U.S. Employment by Industry and Adjusted Land Use
Percentage of Workers 1990

Industry	Hotel	Retail	Office	Industrial	Hospital	Utilities	School	Gov't	Other	None
All Industries	5.63%	14.15%	11.63%	21.14%	6.55%	4.77%	12.13%	11.83%	3.68%	8.48%
Mining	0.00%	0.00%	10.71%	59.63%	0.00%	0.00%	0.00%	0.00%	29.66%	0.00%
Construction	0.00%	0.00%	4.66%	26.76%	0.00%	0.00%	0.00%	0.00%	0.00%	68.59%
Manufacturing	0.00%	0.00%	9.73%	90.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Durable Goods	0.00%	0.00%	9.39%	90.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Stone, Clay, & Glass	0.00%	0.00%	6.20%	93.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Primary & Fabricated Metals	0.00%	0.00%	5.95%	94.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Machinery & Equipment	0.00%	0.00%	11.43%	88.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Nondurable Goods	0.00%	0.00%	9.69%	85.33%	0.00%	0.00%	4.98%	0.00%	0.00%	0.00%
Food & Kindred	0.00%	0.00%	6.36%	91.90%	0.00%	0.00%	0.00%	0.00%	1.75%	0.00%
Printing & Publishing	0.00%	0.00%	23.23%	69.62%	0.00%	0.00%	7.15%	0.00%	0.00%	0.00%
Transportation & Utilities	3.85%	9.19%	10.54%	23.96%	4.58%	7.16%	6.16%	0.00%	0.00%	34.56%
Transportation	3.34%	10.12%	7.71%	26.50%	3.99%	3.57%	3.75%	0.00%	0.00%	41.03%
Communication & Utilities	0.00%	8.13%	15.57%	21.07%	5.72%	13.24%	10.32%	0.00%	0.00%	25.95%
Trade	11.77%	47.70%	10.72%	15.31%	0.00%	0.00%	8.61%	0.00%	0.00%	5.90%
Wholesale Trade	0.00%	30.63%	23.47%	30.79%	0.00%	0.00%	0.00%	0.00%	0.00%	15.11%
Retail Trade	13.80%	54.44%	7.54%	11.47%	0.00%	0.00%	9.24%	0.00%	0.00%	3.52%
Gen'l Merchandise & Apparel	0.00%	75.14%	10.86%	7.77%	0.00%	0.00%	5.50%	0.00%	0.10%	0.61%
Food Stores	0.00%	86.69%	10.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.55%
Automotive	0.00%	46.34%	13.45%	35.26%	0.00%	0.00%	0.00%	0.00%	0.00%	4.95%
Eating & Drinking	32.17%	47.19%	1.59%	3.47%	0.00%	0.00%	12.74%	0.00%	0.00%	2.83%
Finance, Insurance, Real Estate	0.00%	14.46%	78.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.69%
Services	7.26%	11.30%	15.85%	12.67%	12.62%	0.00%	29.91%	0.00%	6.40%	3.99%
Hotels & Lodging	58.62%	0.00%	14.12%	18.50%	0.00%	0.00%	0.00%	0.00%	0.00%	8.76%
Business	0.00%	21.36%	27.94%	40.95%	0.00%	0.00%	0.00%	0.00%	3.35%	6.41%
Health	0.00%	7.70%	39.12%	9.20%	37.85%	0.00%	0.00%	0.00%	3.66%	2.48%
Education	0.00%	0.00%	6.16%	0.00%	6.87%	0.00%	86.03%	0.00%	0.94%	0.00%
Government	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
Federal (incl. Postal Service)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
State & Local	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%

Source:
U.S. Bureau of Labor Statistics, National OES Matrices for 1990-2005, 1993
Economic Strategies Group, 1993

VI. PARCEL DATABASE

1.0 INTRODUCTION

The purpose of this technical memorandum is to describe the work performed by Economic Strategies Group and GIS Southwest in updating MAG Parcel Database, as specified under Task 6 of the Socioeconomic Models Enhancement Project. This includes the data collected, methodology used, and products created. A "Data Dictionary" of the update database is provided in Appendix A. This provides detail as to the contents of the Database, and the definition of its fields.

2.0 METHODOLOGY

The requirements of the Parcel Database update consisted of two primary work items:

- Using MAG's existing Parcel Database as a beginning point, update as much of the parcel information as possible, and add or delete parcels as necessary; and,

- Geocode (determine an X and Y coordinate for), new parcels added to the Parcel Database.

The scope of the second work item was subsequently expanded to include the geocoding of all parcels, not just new ones. This change was necessary since the X and Y coordinates on the existing MAG Parcel Database were based on different address files and coordinate systems.

2.1 DATA UPDATE

The updated Parcel Database is based on data extracted from MetroScan, a CD-Rom based information product created by Transamerica Information Management Systems. MetroScan combines data from the County Assessor's and County Recorder's files. It merges selected data from all sources into a uniform record for each parcel and building in the County.

The approach was to use MetroScan data to update the existing MAG Parcel Database. The existing database consisted of 846,631 parcel-based records, contained in five files of about 170,000 records each. The division of the database into component files greatly facilitates the processing of information due to the large number of records involved.

Selected data were extract from MetroScan into five datafiles, each for the purpose of updating one of the component files of the original database based on the range of parcel numbers. A computer program was written to merge the original Parcel Database, with the

update records extracted from MetroScan. This program updated selected fields in records for existing parcels, added records for new parcels, and deleted existing records for parcels found without a corresponding update parcel.

This program dealt with the data and address portions of the Parcel Database as separate components, as per the format of the original database. This file organization make some sense since only about 50 to 60 percent of parcels have site addresses. However, since file sizes are not of as much concern as they were when the original database was created, a second program was written to merge the data and address components into a single record for simplicity. This second computer program also re-assigns MAG Land Use (MAGLU) codes as necessary.

Selected fields (parcel number, old "X" and "Y" coordinate, address, etc.), were extracted from these five merged data files for use by GIS Southwest for geocoding. Following geocoding, the resulting "X" and "Y" coordinates, along with the 1990 TAZ, were appended to the data files.

2.2   GEOCODING

Parcels in the database were geocoded using two methods. First, if a site address was provided for a parcel, Arc/Info was used to try and match the address with a specific, geographically coded, street link in Maricopa County. The geographically encoded street system MAGNET was obtained through MAG and converted for use in Arc/Info (Geographic Information System) by GIS Southwest. Note that all parcel geocoded by address matching have "AD" in their "XYFlag" field.

The second method was to use the "X" and "Y" centroids of the Assessor's book-maps for each remaining parcel within that book-map area. This method worked quite well since, in general, book-maps are smaller than Traffic Analysis Zones (TAZs), and the primary goal was to accurately assign parcels to TAZs. There are over 6,000 book-maps in Maricopa County as compared with about 1,300 TAZs. Book-maps are the second level of geography used by the County Assessor to track the location of specific parcels. Each of Maricopa County's approximately 875,000 parcels are located in one of over 6,000 book-maps. All parcels geocoded using book-map centroids have "BM" in their "XYFlag" field.

3.0   PRODUCTS

This task resulted in the creation of two key products. First, was the updated Parcel Database. Figure VI-1 shows the record description for the updated Parcel Database. As noted in the introduction to this memorandum, the Data Dictionary in Appendix A describes the contents of each field on the database. The updated Parcel Database contains a total of 874,298 records, divided into five data files by parcel number range. The range of parcel numbers contained in each of the five parts are shown in Figure VI-2.

Second, was the geographically encoded book-map map created to get book-map centroids for geocoding parcels without addresses. This map, and its more than 6,000 unique book-map regions offer great potential for new uses of parcel-based data. Preparing the book-map map proved to be a much more difficult and costly task than was originally estimated, since good reference maps could not obtained. Comprehensive maps depicting all Maps within each of the Assessor's Books do not exist. In fact, it was sometimes necessary to access around a dozen maps to see the boundaries of the Maps within a single Book.

FIGURE VI-1

UPDATED PARCEL DATABASE RECORD

Number	Name	Type	Width	Start	Finish
1	Parcel	Text	9	1	9
2	LCIC	Text	4	10	13
3	Acres	Real	10	14	23
4	AcresFlg	Text	2	24	25
5	X-In	Real	10	26	35
6	Y-In	Real	10	36	45
7	XYFlag	Text	2	46	47
8	Taz 1272	Text	4	48	51
9	Zipcode	Text	6	52	57
10	TaxArea	Text	6	58	63
11	ExCode	Text	15	64	78
12	SaleDate	Text	6	79	84
13	SalePrice	Real	15	85	99
14	LandFCV	Real	15	100	114
15	BldgFCV	Real	15	115	129
16	ExAmt	Real	15	130	144
17	AssPct	Real	8	145	152
18	YearMost	Int	4	153	156
19	YearLate	Int	4	157	160
20	YearEarly	Int	4	161	164
21	SqFtMost	Real	10	165	174
22	SqFtLate	Real	10	175	184
23	SqFtEarly	Real	10	185	194
24	SqFtTotal	Real	10	195	204
25	Stories	Int	6	205	210
26	Rooms	Int	6	211	216
27	Baths	Real	6	217	222
28	Quality	Text	15	223	237
29	Condition	Text	15	238	252
30	TotUnits	Int	6	253	258
31	CenTrct	Text	6	259	264
32	CenBlk	Text	4	265	268
33	PageGrid	Text	8	269	276
34	MAGLU	Int	2	277	278
35	Parcel	Text	9	279	287
36	Address	Text	34	288	321
37	City-Code	Text	2	322	323
38	City-Long	Text	15	325	339
39	X_Coord	Real	10	340	349
40	Y_Coord	Real	10	350	359
41	TAZ90	Text	4	360	363

FIGURE VI-2

RANGE OF PARCELS CONTAINED IN EACH OF THE COMPONENT PARTS OF THE UPDATED PARCEL DATABASE

Part	Begin Parcel	End Parcel	Parcel Count
1	101-01-101A	133-55-026	175,493
2	133-55-027	152-29-082	177,594
3	152-29-083	206-10-001A	180,279
4	206-10-001B	301-67-401	189,010
5	301-67-402	699-08-906	151,922
Total			874,298

The book-map map provided by MAG as the starting point for the task was a partially complete effort implemented in 1989. It contained only about two-thirds of all book-maps, and a significant number of mis-codings. However, the real problem in creating the new map was that good reference maps could not obtained. Comprehensive maps depicting all Maps within each of the Assessor's Books do not exist. In fact, it is sometimes necessary to access around a dozen maps to see the boundaries of the Maps within a single Book.

VII. REGIONAL ANALYSIS ZONE: SPECIAL POPULATION PROJECTIONS

1.0 INTRODUCTION

This working paper and its associated databases and tables have been prepared to explore alternative methods for estimating and projecting special population groups at the Regional Analysis Zone level of geography. This paper describes data collection and analysis efforts, and presents methodologies which could be used to create estimates and projections of the various special population groups and sub-groups. These include estimates for 1990, and projections for the forecast years of 1995 through 2040 in five-year intervals for each special population group.

Special populations are divided into two parts, resident group quarter populations and non-resident seasonal and transient populations. Each of these population groups are then further subdivided into specific types of contributors to each special population group.

Group quarters population is that portion of the resident population that resides in non-household living quarters. This includes population in nursing homes, school dormitories, military bases, jails and other institutions such as rehabilitation centers or psychiatric care facilities.

Seasonal and transient population is the non-resident population that resides temporarily within an area at certain times of the year. For the purposes of this analysis, seasonal population is that portion that resides within an area for more than two weeks. This includes people staying within private homes or apartments, mobile homes or recreational vehicles for more than two weeks. Transient population is that portion that resides within an area for less than two weeks and who typically reside in a hotel, motel, or resort.

1.1 PAPER ORGANIZATION

The balance of this working paper is divided into four sections. Section 2.0 reviews the work performed by ESG to inventory existing generators of special populations. These include group quarters housing units, mobile home and recreational vehicle parks, and hotels, motels and resorts. Also included in this section is an inventory of existing retirement-oriented developments in Maricopa County.

Section 3.0 transmits the results of our effort to identify specific future generators of special populations. This includes information obtained through our interviews with city and town planning departments, as well as information obtained through creation of the planned and proposed development database.

Section 4.0 presents the methodology developed by ESG to perform sub-county projections of special populations. In general, these approaches attempt to use the same sub-groups employed in the development of the County-level special population projection methodology. However, in some cases it was found that projecting sub-groups was too difficult.

Finally, Section 5.0 illustrates the projection methodology by presenting RAZ-level projections of special populations prepared by ESG. **These projections are only provided to illustrate the recommended projection methodology, and should not be used in any analysis for any reason.**

2.0   SPECIAL POPULATION GENERATOR INVENTORY

As discussed in the introduction to this paper, special populations consist of both group quarters population, and non-resident transient and seasonal populations. This section describes our approach to developing an inventory of existing generators, our results, and a comparison with estimates currently used by MAG. Figures VII-1 through VII-6 show the contents of the databases prepared to implement the inventory of special population generators.

2.1   GROUP QUARTERS

Overall, the group quarters population estimates prepared by ESG, based on its inventory of group quarter units for 1990, were only 1,413 persons greater than the MAG/Census figures. Larger discrepancies between Census and ESG estimates exist within some of the components of group quarters population, as described below. Most of the differences can be explained through the inherent difficulty of identifying and counting group quarters populations.

Nursing Homes. A listing of currently operating nursing homes in Maricopa County was compiled from the employment database (Claritas NPDC), MAG and Trip Reduction databases, and from information supplied by the Arizona Department of Health Services. In all, over 400 nursing homes were identified with a total of over 22,000 beds. Since not all beds in all facilities are used for permanent residents, it was necessary to determine the portion which are, and to determine occupancy rates for them.

For skilled care nursing homes, occupancy information was available from the Arizona Department of Health Services. However, for supervisory care homes it was necessary to interview a sample of them, and estimate the population in all homes. ESG also identified the number of beds in hospitals which are also occupied by persons on a permanent basis.

The results of the analysis led to a 1990 estimate of 10,213 group quarters residents, as compared with the 8,659 reported by the Census. The difference of 1,554 people could be caused if the supervisory care homes, where the population was estimated, have lower occupancy rates than the skilled care homes. Or, it could be that ESGs simply identified more of the group quarters generators than did the Census.

School Dormitories. School dormitory population estimates were derived through direct interviews with the school involved. Maricopa County schools identified with residential housing included ASU, Grand Canyon University, and the Judson (Prep/Boarding) School. Our interviews with representative at these institutions yielded a 1990 estimate of 5,752 persons, 496 persons more than the Census estimate.

VII - 2

FIGURE VII-1

RECORD DESCRIPTION
FINAL HOTEL DATABASE
MAG SOCIOECONOMIC MODELS ENHANCEMENT PROJECT

Field Name	Description
ID	Record identification number
LASTUP	Last record update
PARCEL	Tax assessor's book-map-parcel
REGION	General geographic region
STREET	Street Number
DIR	Street direction
STRNAME	Street name
CITY	City
ROOMS	Current number of rooms
ROOMS85	Number of rooms in 1985
ROOMS89	Number of rooms in 1989
TYPE	Type of property
CLASS	Economic class of property
OCC85	Percent total occupancy in 1985
OCC89	Percent total occupancy in 1989
LE85OCC	Percent leisure occupancy in 1985
GR85OCC	Percent group occupancy in 1985
CM85OCC	Percent commercial occupancy in 1985
OT89OCC	Percent other occupancy in 1989
RATE85	Room rate in 1985 (when known)
RATE89	Room rate in 1989 (when known)
OWNERNAM	Owners name
OWNERADD	Owners address
OWNERCITYST	Owners city and state
ZIP	Owners zip
BLDGNAME	Property name
PHONE	Contact phone number
YRBLT	Year built
PRICE	Last selling price (when known)
MONTH	Month of last sale
YEAR	Year of last sale
SQFEET	Building square footage
AREA	Map area - Kammrath & Associates
ABBR	Street abbreviation code - Kammrath & Associates
EWC	East-west coordinate - Kammrath & Associates
NSC	North-south coordinate - Kammrath & Associates
BLDGZIP	Building zip code
XCOORD	"X" Coordinate (Arizona Central State Plane System)
YCOORD	"Y" Coordinate (Arizona Central State Plane System)
TAZ	Traffic Analysis Zone
RAZ	Regional Analysis Zone

FIGURE VI-2

RANGE OF PARCELS CONTAINED IN EACH OF THE COMPONENT PARTS
OF THE UPDATED PARCEL DATABASE

Part	Begin Parcel	End Parcel	Parcel Count
1	101-01-101A	133-55-026	175,493
2	133-55-027	152-29-082	177,594
3	152-29-083	206-10-001A	180,279
4	206-10-001B	301-67-401	189,010
5	301-67-402	699-08-906	151,922
Total			874,298

The book-map map provided by MAG as the starting point for the task was a partially complete effort implemented in 1989. It contained only about two-thirds of all book-maps, and a significant number of mis-codings. However, the real problem in creating the new map was that good reference maps could not obtained. Comprehensive maps depicting all Maps within each of the Assessor's Books do not exist. In fact, it is sometimes necessary to access around a dozen maps to see the boundaries of the Maps within a single Book.

FIGURE VII-3

RECORD DESCRIPTION
FINAL MOBILE HOME/RV DATABASE
MAG SOCIOECONOMIC MODELS ENHANCEMENT PROJECT

Field Name	Description
ID	Record identification number
LASTUP	Last record update
DRFLAG	Record handling flag (XX for Apache Junction or Pinal County)
PARCEL	Tax assessors book-map-parcel
STREET	Street number
DIR	Street direction
STRNAME	Street name
CITY	City
OWNERNAM	Owners name
OWNERADD	Owners address
OWNERCITYST	Owners city and state
ZIP	Owners zip code
MHPNAME	Property name
PHONE	Contact phone number
SPACES	Total number of spaces
RV	RV/Travel trailer spaces
MHSPACES	Mobile home spaces
PRICE	Last selling price (when known)
MONTH	Month of last sale
YEAR	Year of last sale
ZONING	Zoning classification
AREA	Map area - Kammrath & Associates
LANDSIZE	Property area in acres
ABBR	Street abbreviation code - Kammrath & Associates
EWC	East-west coordinate - Kammrath & Associates
NSC	North-south coordinate - Kammrath & Associates
YRBLT	Year built
BLDGZIP	Property/Building zip code
XCOORD	"X" Coordinate (Arizona Central State Plane System)
YCOORD	"Y" Coordinate (Arizona Central State Plane System)
TAZ	Traffic Analysis Zone
RAZ	Regional Analysis Zone

FIGURE VII-4

RECORD DESCRIPTION
FINAL NURSING/HOSPITALS DATABASE
MAG SOCIOECONOMIC MODELS ENHANCEMENT PROJECT

Field Name	Description
ID	Record identification number
RECID	Record identification (from Employment database)
LASTUP	Last record update
DATABASE	Original source of record
SIC	Standard Industrial Classification
COMPANY	Company/Facility name
ADDRESS	Company address
SUITE	Company suite
CITY	Company city
ZIPCODE	Company zip code
PHONE	Contact phone
BEDS85TOT	Total number of beds in 1985 (if known)
BEDS90TOT	Total number of beds in 1990 (if known)
TOTBEDS	Total number of beds currently
BEDS85RES	Number of residential only beds in 1985
BEDS90RES	Number of residential only beds in 1990
RESBEDS	Number of residential only beds currently
OCC85	Average daily occupancy in 1985
OCC90	Average daily occupancy in 1990
OCCUPANCY	Average daily occupancy currently
XCOORD	"X" Coordinate (Arizona Central State Plane System)
YCOORD	"Y" Coordinate (Arizona Central State Plane System)
TAZ	Traffic Analysis Zone
RAZ	Regional Analysis Zone

FIGURE VII-5

DATABASE CODES
FINAL NURSING/HOSPITALS DATABASE
MAG SOCIOECONOMIC MODELS ENHANCEMENT PROJECT

Field/Value	Code Description
DATABASE	Original source of record

Code	Description
NATA	Claritas NPDC
SITE	Trip reduction database
EMPL	Trip reduction database
MAGR	MAG Employment Database
CEMP	Trip reduction database
DHS	Department of Health Services
AHA	American Hospital Association
MISC	Phonebook, Newspapers, other

FIGURE VII-6

RECORD DESCRIPTION
FINAL JAIL/INSTITUTION DATABASE
MAG SOCIOECONOMIC MODELS ENHANCEMENT PROJECT

Field Name	Description
ID	Record identification number
LASTUP	Last record update
SIC	Standard Industrial Classification
PROPNAME	Property/Facility name
STRNUM	Street number
STRDIR	Street direction
STRNAM	Street name
STRSUF	Street suffix
CITY	City
ZIP	Zip code
BEDS85	Number of beds in 1985 (if known)
BEDS90	Number of beds in 1990 (if known)
BEDS	Number of beds currently
POP85	Population in 1985 (if known)
POP90	Population in 1990 (if known)
POPULATION	Current population
OWNER	Onwer/Operator
OWNADDR	Owner/Operator address
OWNCITY	Owner/Operator city
OWNSTATE	Owner/Operator state
OWNZIP	Owner/Operator zip code
PHONE	Contact phone
XCOORD	"X" Coordinate (Arizona Central State Plane System
YCOORD	"Y" Coordinate (Arizona Central State Plane System
TAZ	Traffic Analysis Zone
RAZ	Regional Analysis Zone

The most important finding of the research performed by ESG in that area was that the dormitory occupancy rates at ASU (by far the majority of persons in this component), have fallen significantly since the 1990 Census. The decline is due in part to a slight decline in enrollment, but is more likely a function of the downturn in the economy in the early nineties, and the subsequent greater availability and affordability of off-campus multifamily housing. Based on renewed economic growth in Maricopa County, we are projecting dormitory occupancy rates to increase steadily over the next several years.

Military Bases. Since military bases are identified by the Census, ESG used those figures for its 1990 estimate of population. Military group quarters population projections are based on the 1,002 residents at Luke AFB. Interviews with officials at Luke AFB indicate that no new on-based housing is planned.

Jails and Other Institutions. ESG's inventory included 15 institutions with a total population of 8,849 persons. This is 377 more persons than were reported by the Census Bureau. The difference might well be caused by simple fluctuations in the inmate population as we were unable to get data from all facilities that exactly coincided with the date of the census, which itself is only nominal.

Other Group Quarters Population. This component is calculated as a percentage of the other group quarters population components, and therefore did not include an inventory component. ESG RAZ estimates and projections, provided for illustrative purposes, are based on this same percentage approach. As a result they tend to vary significantly from the MAG estimates since these are based on Census data at the Block-level aggregated to TAZs and RAZs.

2.2   SEASONAL POPULATION

Estimates of seasonal population were based on our inventory of Mobile Home and Recreational Vehicle (RV) parks, as well as an estimate of the number of people occupying other types of housing units on a temporary basis. As a result of including all of these sources, the seasonal population estimate (164,965 in 1990) is significantly greater than previous MAG estimates. Research performed by A.S.U. indicates a Mobile Home and RV seasonal population of about 90,000 people in 1990. This combined with persons occupying other types of units seems to support the new estimates.

RV and Mobile Home Parks. The inventory of mobile home and RV parks compiled by ESG included more than 600 parks. The number of mobile home and RV spaces were determined for each park based primarily on survey data from Kammrath & Associates. The share of spaces occupied by seasonal visitors was determined from the A.S.U. Winter Visitors survey. Survey results by zip code, not published with the survey results, were provided to ESG to make the estimates more accurate.

The resulting number of spaces/units occupied by seasonal visitors was then multiplied by 2.0 to compute seasonal population from these generators. The figure of 2.0 was developed by A.S.U. in the process of conducting its annual Winter Visitors survey. While it seems likely that the actual number of persons per unit is slightly less than 2.0, no information was available on which to base a better estimate. New survey research would be required to develop a more accurate persons per unit rate.

The research resulted in a peak estimate of 43,636 mobile home, and 52,525 RV seasonal visitors in 1990. The total for these two generators, 96,161 is close to the 90,000 person estimate included in the survey results published by A.S.U.

Other Seasonal Housing. Estimates of seasonal population in other types of housing units were made at the County level by analyzing the number of units reportedly held for seasonal, migrant, or other uses by the Census Bureau. Accordingly, the RAZ estimates included herein are based on similar vacancy status information. The total number of units held for seasonal, migrant or other uses by RAZ was multiplied by 2.0 person per unit to estimate seasonal population in other housing by RAZ.

However, seasonal populations residing in other housing types are also affected by retirement communities, and were therefore inventoried by ESG. This information is especially useful in preparing projections of seasonal population in other housing. Retirement communities are defined as those planned area developments specifically designed for an older population, and which often have restrictions on the minimum age of their residents. For the purpose of this paper, only retirement communities with distinct identities as subdivisions or "new towns," and with populations greater than 1,000 people have been included.

Information on retirement communities was compiled from a 1992 study by Charlotte Welch (Retirement Communities in Maricopa County), the Maricopa County Department of Planning and Development (Large Scale Developments, 1992) and 1993 data on planned area developments prepared by Canyon Research. This information was also enhanced and/or supplemented by site and development plans.

Currently there are twelve of these large-scale retirement communities within the county. The 1990 Census indicated that there were over 230,000 residents age 65 or older in Maricopa County. Of these, almost 92,000 lived in these retirement communities. The twelve communities contain over 25,000 acres of land and have almost 59,000 residential units.

Of the twelve retirement communities listed on Table VII-1, three (Sun City, Sun City West and Sun Lakes) are significant enough to be considered census designated places (CDP) by the U.S. Bureau of the Census. Youngtown is incorporated as a town. Although the larger communities do contain significant amounts of non-residential building space, the predominant land uses are residential and recreational. Every retirement community included on Table VII-1, with the exception of Youngtown, has at least one golf course, and half of those listed contain more than one.

2.3   TRANSIENT POPULATION

Hotels, Motels and Resorts. Based primarily on a database purchased from Kammrath & Associates, ESG compiled a database of 337 hotels, motels, and resorts in Maricopa County. Based on data for sub-markets in Maricopa County produced by Deloitte & Touche, the rooms included in the inventory were converted to estimates of transient population. Room occupancy was subdivided into demand components including leisure, group, business and other travelers. Each group was converted to persons using persons/room factors also developed by Deloitte & Touche.

These population estimates were then converted from average occupancy rates to peak occupancy rates using data from the Phoenix and Valley of the Sun Convention & Visitor Bureau. The resulting estimated peak transient population of 40,792 (1990) was somewhat less than estimates prepared previously by MAG. These discrepancies could be due to a differences in the occupancy rates, persons per room or base inventory. The new inventory and population estimates will be used as the baseline for the new projections.

3.0 FUTURE SPECIAL POPULATION GENERATORS

This section summarizes information gathered by Economic Strategies Group through interviews with each jurisdiction in Maricopa County for the purpose of projecting special populations. These interviews sought information regarding any approved, proposed or future plans for the development of facilities for the purpose of housing special populations.

Representatives of the planning departments from the cities and towns were interviewed as well as other key informants from various government agencies associated with institutions generating and/or housing special populations.

For this section of the white paper we will only be concerned with actual planned or proposed development or expansion of nursing homes, dormitories, jails and other institutions as well as mobile home and RV parks, hotels, motels and resorts. Although all the cities within Maricopa County were interviewed, most either had no plans for such development or expansion or were uncertain as to the details. Therefore, little of this information was available for use in preparing the new RAZ level forecasts of special populations.

3.1 GROUP QUARTERS POPULATION

Nursing Homes. In the city of Cave Creek there is some discussion of the development of retirement homes together with some form of medical aid or assistance. Approximately 18 to 20 apartments are proposed and may be completed by 1998. The location would be within the downtown core area, TAZ 5. Model Input: RAZ 207, 20 Units.

In the city of Chandler there is a proposal for development of 400 units. These would be limited care and independent living accommodations, similar to the Friendship Village development located in Tempe. They would be located on the northwest corner of Arizona Avenue and Chandler Blvd, TAZ 1172. Completion of the development is expected in the 1995-2000 time period. Model Input: RAZ 316, 400 Units.

In the town of Fountain Hills there is discussion of development of a rural hospital setting with 24 hour nursing care, housekeeping and residential units as required. It will be located in the downtown area, TAZ 265 or 235. Development is at least 5-10 years away.

There is interest in the city of Gilbert for long term residential care facilities for actively independent adults but there have been no proposals. Model Input: None.

In the town of Surprise there is a proposed expansion of the medical offices and facilities located at Baptist Village, 12215 W. Bell Rd., TAZ 178. Model Input: RAZ 234, 100 Units.

School Dormitories. Although several of the cities within Maricopa County expect expansion of their community colleges, community colleges within Maricopa County do not typically have dormitories located on their campuses. The student demand for housing is usually left to off campus housing. The exception to this is in the City of Avondale where there is an interest in future development of an off campus dormitory just south of the city boundary with Litchfield Park. This would be within an adjacent high density district on Dysart Road, and would meet the housing demand for the planned expansion of Estrella Mountain Community College to 15,000 students by 2005.

In the City of Mesa there is a great deal of speculation regarding the reuse of Williams Air Force Base. Williams AFB is located at Williams Field Rd. and Power, TAZ 1204. Included in this is the possibility of an A.S.U. East Campus. Future development of the site depends on its reuse. If the site is reused as a campus the barracks and single family housing units will be reused as student housing on an as needed basis. Also, Rio Salado Community College at Bush and McKellips, TAZ 662, is likely to expand on their 60 acre site within the next 5-10 years although, like all other Maricopa Community colleges, no student housing is planned.

Assumptions used in the model as per the student population of each of the three sites discussed above is summarized in a later discussion, and in Table VII-8.

The only other school with a residential component is the Judson School in the Town of Paradise Valley. The school is located at Indian Bend Road and Mockingbird Lane, TAZ 421, on a 50 acre site. It is a well established school and new dormitories are proposed in its expansion. The expansion program is gradual and is expected to continue over the next 5-15 years. However, since no firm number of units, or construction schedule exists, no assumptions regarding this expansion were included in this version of the projections.

Jails and Other Institutions. It should be noted at the beginning of this section that in Maricopa County, city jail facilities only detain people for 24 hours and then they must be transferred to a County facility. Also many of the smaller communities contract their police services from the Maricopa County Sheriff. For these two reasons there are no other plans within any of the cities for expansion of their jail facilities.

The demand for jail facilities is a complex one. It is a function of several factors. These include but are not to be limited to the juvenile system within the area, the general feeling of the community towards crime and the corresponding willingness to fund new correctional facilities, the age structure of the population and the size of the population itself. In 1987, Maricopa County opened a new jail. This facility was to be gradually filled over the next 3-5 years but it reached maximum occupancy within a year. Recently, tent cities have been constructed to relieve the demand pressures on the existing facilities. The juvenile system of the area is considered to be a key in projecting the demand for jail facilities.

Known plans by the County for new correctional facilities include only one facility. In the City of Peoria, the North West Maricopa County Complex is proposed for the 40 acre property adjacent to the Peoria Municipal buildings located at 8401 W. Monroe, TAZ 306. A Juvenile Detention Center will be included within this complex. It is expected to be built sometime before the year 2000. We have assumed that one-fourth of this site is used for a new suburban-type correctional facility. Model Input: RAZ 239, 160 Inmates.

3.2 SEASONAL POPULATION

RV and Mobile Home Parks. In the Town of Gila Bend there is a potential site for an additional mobile home park. It is on the east side of town, to the north of I-8 and to the south of Highway 85. It would have a capacity of 30+ lots. Model Input: RAZ 331, 30 Lots.

In the Town of Surprise expansion of the Happy Trails RV Park is proposed. This is a resort that includes two golf courses. It is located at 17200 W. Bell Rd., TAZ 145. Completion is scheduled for 1994. Model Input: RAZ 232, 200 Lots.

In the Town of Wickenburg there has been an informal proposal for a 40+ acre mobile home park. The site is located adjacent to the American Inn on the east side of Highway 60. No application has been submitted yet and development is likely to be 2-3 years away. Model Input: RAZ 201, 600 Lots.

Other Seasonal Housing. Of the twelve retirement communities within the county, only five are completed. The remaining seven have over 19,000 unbuilt residential units. Construction is just beginning on a 10,000 unit resident community near Goodyear by the developers of Sun Lakes. No other plans of expansion or development of other retirement communities within Maricopa County are known at this time. The number of units yet to be constructed in each development, and the RAZ where each development is located is shown in Table VII-1.

3.3 TRANSIENT POPULATION

Hotels, Motels and Resorts. In the City of Avondale there is potential for a resort in the vicinity of Phoenix International Raceway, TAZ 1161. Development is dependent on the delivery of sewer and water facilities as well as the construction of a bridge crossing on the Gila River. There also is potential for hotel/motel development in the freeway corridor area. This will be ancillary to business and industrial activity. Model Input: RAZ 324, 200 Units.

In the Town of Buckeye, an 80-unit motel is proposed for the junction of Highway 85 and Oglesby Road. Timing is dependent upon construction of a water supply line to the site. It is interesting to note that much of the population of Buckeye is seasonal or transient, following the winter work force demands of the local cotton harvest. Model Input: RAZ 277, 80 Units.

In the Town of Cave Creek, TAZ 5, a resort is proposed. The resort will have 200 beds and a golf course. The golf course is already in place and building construction will be completed within the next five years. Model Input: RAZ 207, 200 Units.

The City of Chandler is seeking specific proposals for a hotel downtown, or in the I-10 corridor area. This would be a 200 unit hotel that the city feels will likely be constructed within the next 5-10 years. Additional demand for hotel accommodation could also be stimulated by the growth of activity on adjacent Indian land regarding casino gambling and the expansion of industrial activity near Queen Creek Rd. and I-10. Events at Compton Terrace will also stimulate need for hotel accommodations in the area. Model Input: RAZ 315, 200 Units — wait for more definite information on development at Queen Creek & I-10.

In the Town of Fountain Hills sites have been designated for resorts but none have been developed. The corner of Saguaro Drive and Shea Blvd., TAZ 265 or 334, is likely to be the first area developed and will be about 50 rooms. This will be within the next five years. Model Input: RAZ 250, 50 Units.

In the Town of Gila Bend a 60 room motel has been refurbished and will reopen in October 1993. It is located at 1046 Pima Street, TAZ 1380. Model Input: RAZ 331, 60 Units.

In the City of Gilbert there are several potential hotel development sites. On the south west corner of Warner and Gilbert, TAZ 1153, is a 15 to 20 acre site for a possible 200 room hotel. On the north west corner of McQueen and Guadalupe, TAZ 1074, is a 300 acre parcel to include a hotel, residential development and a golf course. Also on this corner but to the south east, TAZ 1106, is a recreation facility called Arizona Ski Springs. This facility is considering expansion to include 200 time share casitas. Development of a theme park is also under discussion. The park would be located east of Val Vista. Hotel development is possible as a spin off from this activity. Model Inputs: RAZ 318, 200 Units; RAZ 311, 400 Units.

In the City of Glendale there is a possible long term expansion of the Sage Hotel. This hotel is located downtown at 5949 NW. Grand Ave., TAZ 371. The North Valley Specific Plan calls for the development of a Hotel at the Arrowhead Mall now under construction at Bell Road and 79th Ave, TAZ 156. Model Inputs: RAZ 258, 100 Units; RAZ 222, 200 Units.

In the City of Mesa there is a hotel development proposal in conjunction with the existing Hilton at Alma School and the Superstition Freeway, TAZ 1016. Expansion will include an additional 256 rooms, a conference center and meeting rooms. Development is likely to be in the next 5-10 years. There also is potential hotel development near the Superstition Springs Mall. Model Input: RAZ 309, 256 Units.

In the Town of Paradise Valley there are several proposals to expand existing resorts, and to develop new ones. A 500 room resort is proposed to include a 9 hole golf course on the corner of Indian Bend and Scottsdale Rd., TAZ 388. Mountain Shadows at 56th St. and Lincoln Dr., TAZ 420, is expected to expand with 50-75 additional rooms. Camelback Inn at 54th St. and Lincoln Dr., TAZ 420, is expanding with an additional 100-150 rooms within the next three years. A potential 20 acre site exists at Scottsdale Road and Hummingbird Lane, TAZ 387. Hotel development is expected to occur within the next 5-10 years on this site. Model Inputs: RAZ 262, 525 Units (3 hotels); RAZ 263, 500 Units.

In the City of Peoria there is hotel development planned in conjunction with the PAD for the Boswell Hospital Annex. A potential hotel location also exists in North Peoria in association with the development of the Arrowhead Regional Mall. Model Input: None - no firm plans.

In the City of Phoenix there is potential for hotel development in the downtown area generated by the Civic Convention Center. Possible locations include 2nd/3rd St. north of Jefferson, adjacent to City Hall, TAZ 756. Model Input: RAZ 275, 500 Units.

In the City of Tolleson there are plans by Westcor for a high rise hotel on 40 acres to the north of the intersection of I-10 and 99th Ave, TAZ 598. A syndicate has also proposed development to the south of this intersection, TAZ 674, on 150 acres. This would include business hotel and motel facilities in conjunction with industrial and highway related development. Model Input: RAZ 273, 500 Units (2 hotels).

4.0 PROJECTION METHODOLOGY RESEARCH

The methodology research for RAZ-level special population projections is consistent with the methodology developed for the County-level projections in that it divides each special population group into its contributing components. For example, we attempted to subdivide Group Quarters population into military, institutional, college, nursing home, and "other" components. The basic approach was to determine factors that seem to drive the current distribution of each component activity, and apply them to land use information to project future activity.

The fundamental steps of implementing this approach were:

1) Develop a set of locational factors suitable for predicting the location special populations;

2) Analyze the locational factors with existing special populations to develop relationships;

3) Identify appropriate land uses for each special population component;

4) Calculate the relationship of population to land area for each population component; and

5) Produce a system / format to implement the projections.

The balance of this chapter transmits the effort undertaken by ESG to accomplish each step in the approach. The descriptions focus on methodology rather than actual results, as we expect that most information would be updated / refined prior to official projections being developed.

4.1 SPECIAL POPULATION LOCATIONAL FACTORS

The locational factors developed by ESG for analyzing special population groups included some commonly used by MAG, such as population and employment density indicators, as well as some new measures including:

- Recreation Index
- Major Retail Index
- Airport Index
- Hospital Index

Each of these factors were developed by compiling an inventory of known attractors, and then creating indices for each RAZ based on aggregated TAZ distance-weighted measurements. The measurement varied by factor.

Recreation. In the case of the Recreation Index, data for attendance at major places of interest from "Inside Phoenix" was used to calculate the locational factor. As Table VII-2 shows, this information provides the annual attendance at a number of attractions throughout Maricopa County. Each of the attractions were assigned an X and Y coordinate, and then accessibility indices for TAZs were calculated using distance (straight-line) as an inverse weighing factor.

Retail. Like recreation, the Retail Index was calculated using data for major retail centers around Maricopa County. Square footage was used as the measurement of the size of each retail attractor (see Table VII-3). Again, each attractor was coded with an X & Y coordinate an indexes were calculated using distance as an inverse weighing factor.

Airport. Commercial passenger enplanements at Sky Harbor International Airport were used as the "size" indicator for this attractor. Straight line distance was again used to determine the density index. As / if other airports institute commercial service, they could be added to the index calculation in the same manner.

Hospital. The number of beds at each facility was extracted from the inventory of hospitals prepared as part of the first phase of this task. Through that process, X & Y coordinates had already been assigned to each facility. Straight line distance was again used to determine the density index.

4.2   LOCATIONAL RELATIONSHIPS

In this step of the methodology development for special populations, the locational factors detailed above, along with 1985 levels for each special population group, were analyzed to develop locational equations for each special population component. The Microfit statistics package was used to perform ordinary least squares (OLS) regression analysis based on adjusted White's heteroscedasticity-consistent standard errors. The following sections describe the results of that analysis for each special population component.

The note that the purpose of this part of the analysis was to explore options for predicting the distribution of special populations. It may not be possible, or practical, to develop projections of all the independent variables used in the following locational relationships. Nonetheless, some of the relationships have good predictive power, and it should be possible to develop proxies for many of the independent variables which could be projected.

4.2.1 Group Quarters

The analysis of the location of Group Quarters populations was implemented using each of its component elements. However, in the process of analyzing the location of the elements it was found that, by their nature, they are too concentrated to be evaluated using statistical methods. These group quarters elements include military, college dormitory, and jail components of Group Quarters population.

Simply put, the total number of sites was too small to be used as statistical sample. The only locational variables that were shown to be significant in predicting the 1990 distribution of these activities was the distribution of the activities in 1985. Therefore, a different approach was used to project growth for these elements of group quarters population. In short, the approach used was to incorporated identified known additions into the appropriate time

periods, and allocate the balance to RAZs on a pro rata basis. For the time periods after 2000, all growth was allocated on a pro rata basis.

Note that some success was obtained in analyzing the distribution of group quarters population in nursing homes using statistical analysis. The analysis showed that population density and hospital proximity were both highly significant in predicting the distribution of population in nursing homes (both variables had T-Ratio's in excess of 2.00).

Seasonal Population. As per group quarter population, the distribution of seasonal population was not successfully analyzed using statistical analysis. The analysis showed that the distribution of seasonal population is positively influenced by population density, and negatively influenced by employment density. However, this would be true on any population group. In general, we found that the location of growth in this population group was most influenced by the existing seasonal population, and by large-scale retirement developments.

The methodology developed to project seasonal population was divided into two segments, one for RV's and Mobile Homes, and another for "other housing". However, the growth in each segment was forecast based on known additions, and a pro rate distribution of the balance as for group quarters population.

Transient Population. The only success in using the locational factors to predict the distribution of special population was for the components of transient population. As described above, transient population is divided into four components: leisure, group, business, and other. The analysis for each component is as follows.

- *Leisure.* The most significant predictor of leisure transient population was the distribution of total transient population in the time period before. In addition, the Retail Index was found to be positively significant in predicting the distribution of leisure transient population, while the Recreation Index was found to be negatively significant. At first the negative sign on recreation seems counter-intuitive for leisure, however the index was developed using large, centrally located attractions (Zoo, museums, etc). Therefore, the suburban location desired by leisure travelers, separates them from "major" attractions.

  The resulting equation had an adjusted R-squared (R-bar Squared) of 0.908, meaning that it explained about 90 percent of the variation in the level of leisure transient population. Considering that the data was cross-sectional, and that the distribution is ultimately constrained by land use, this result is acceptable. Using the independent variables developed by ESG, the locational equation developed was as follows:

  $$\text{Leisure Pop. } 1990 = 0.3838 * \text{Trans}1985 + 0.0197 * \text{Retail Index} - 0.0754 * \text{Recreation Index} + 19.20$$

- *Group.* Population Density was found to be positively significant in predicting the distribution of group transient population, while employment density was found to be negatively significant. These findings served to confirm the assumption made by ESG in developing County-level forecasts

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that this component of transient population would most closely resemble the leisure component. The resulting equation had an adjusted R-squared (R-bar Squared) of 0.68, meaning that it explained about 68 percent of the variation in the level of leisure transient population. Considering that the data was cross-sectional, and that the distribution is ultimately constrained by land use, this result is acceptable. Using the independent variables developed by ESG, the locational equation developed was as follows:

$$\text{Group Pop. } 1990 = 0.3122 * \text{Trans1985} + 0.5824 * \text{Pop. Density} - 1.0691 * \text{Emp. Density} + 5.74$$

- **Business.** Employment and airport accessibility were both found to be positively significant in predicting the distribution of business transient population. Although, like the other two components of transient population, the distribution of transient population in the previous time period was the more significant indicator. The resulting equation had an adjusted R-squared (R-bar Square) of 0.895, meaning that it explained about 90 percent of the variation in the level of leisure transient population. Considering that the data was cross-sectional, and that the distribution is ultimately constrained by land use, this result is acceptable. Using the independent variables developed by ESG, the locational equation developed was as follows:

$$\text{Business Pop. } 1990 = 0.2733 * \text{Trans85} + 0.2639 * \text{Emp. Density} + 0.0458 * \text{Air Index} + 6.52$$

- **Other.** In the best analysis for "other" transient population, recreation accessibility and leisure transient population were found to be positively significant in predicting the distribution of leisure transient population. However, the resulting equation had an adjusted R-squared (R-bar Squares) of just 0.29, meaning that it explained only about 29 percent of the variation in the level of "other" transient population. This is indicative of this group consisting of a wide variety of type of visitors. It was determined, therefore, to geographically distribute these visitors as a function of the other three components of transient population.

Note that when it comes time for MAG to implement this methodology as part of it update process, it will be necessary to re-estimate ALL the equations described above to be consistent with its own set of independent variables. However, the variables important to each equation could be expected to remain unchanged.

4.3 LAND USE CATEGORY SELECTION

Once locational equations were developed, land use information was examined to determined how it could best be used to further direct the distribution of the special population groups. As with the statistical analysis, the success of this effort was mixed. The

"MAG High" land use categories were reviewed to identify land uses corresponding to the special population groups. This set of categories was chosen since the relationships between land use categories across all jurisdictions has been determined. Unfortunately, we were unable to identify corresponding land uses for many of the special population groups.

In the case of group quarters populations, only the hospital, schools and government land use categories appeared to be at all appropriate, and even they seemed too broad to use in projecting most components of group quarters population. Therefore, it was necessary to develop the RAZ-level projections for nursing homes without using land use information.

In the case of seasonal population, no specific land use categories were identified as being suitable for the allocation of growth. However, as discussed above, all three portions of seasonal population, Mobile Homes, RVs, and "other" housing, should be projected based on known additions, and the existing distribution. Further, the component of seasonal population residing in other types of housing should be based on the Census estimate of the number of units held for seasonal, migrant, and other use. This portion of units by type should be determined for each RAZ, and applied to projected housing inventories to project seasonal population in other unit types.

Finally, for transient population, the Hotel/Motel and Resort land use categories were chosen from the MAG high land uses. These land uses are obviously quite suitable for use in projecting the distribution of transient population.

4.4   LAND USE DENSITY & CONSUMPTION

Where land use categories were found that could be used to help project the distribution of special populations, it was necessary to develop density assumptions to correlate population and land area. Land use density estimates were prepared for most components of the special population groups so that the information would be available for future use. Each density estimate is based on a sample of the generators in each category obtained from the inventory compiled by ESG.

The land use density assumptions developed for this task are shown applied to County-level growth in each special population component to project the land to be consumed. Note that growth in each special population component can vary significantly, and somewhat erratically from time period to time period. This is due to the fact that the projections for each component are a function of growth in a specific subset of the population in Maricopa County, and across North America. In particular, the special population components based on older people, resident population in nursing homes and seasonal population, show rapid growth at the end of this century and early next century due to the age structure of the baby boomers.

Group Quarters. Population density assumptions, and land use absorption by group quarters populations are summarized in Table VII-4. A detailed description of these estimates and projections for each component follows.

- • *Jails.* Because of the wide disparity in population densities between the two downtown facilities and the outlying facilities, two sets of density ratios were developed. Outlying facility population density ratio of 15.56 persons per acre was developed using the average of:

- The three facility Durango complex - 2,364 persons on 95 acres
- Perryville - 2,176 persons on 200 acres
- New River - 1,585 persons on 145 acres

Downtown facility population ratio was found to be 442.80 persons per acre, based on the Madison Street and First Avenue facilities which house 2,214 persons on 5 acres of land.

Adding the population of the downtown facilities to those in the outlying area (juvenile centers not included), showed the April 1993 population in jails at 8,808, implying that 25 percent of the total number of prisoners were housed in the high-density facilities downtown. In calculating acreage needed for future use, three-fourths of the increase in population was assumed to occur in outlying facilities (15.56 persons per acre), and one-fourth was assumed to occur in downtown facilities (442.80 persons per acre). Using these assumptions, about 8.3 acres of downtown government land, and 709 acres of outlying government land will be absorbed for use by jails between 1990 and 2040.

- **College Dormitories.** The college dormitories at A.S.U. were found to house about 66 persons per acre. This is based on an average of 44 rooms per acre, with an average occupancy of 1.5 persons per room. Accounting for the amount of space currently vacant in existing dormitories, this population density would imply absorption of about 113 acres of land for dormitories between 1990 and 2040.

- **Nursing Homes.** A sample of medium-sized (103 to 180 room) nursing homes built since 1984 were used to derive population density estimates. For each facility acreage information was obtained either from phone survey or assessor's records. The facilities were found to have 27.6 beds per acre. This would translate the projected county-level population in nursing homes into absorption of about 709 acres of land between 1990 and 2040.

Seasonal

- **Mobile Homes.** A sample of 17 mobile home parks built since 1984, dispersed around the County but primarily in Mesa and Phoenix, were used to derive an average of 6.63 units per acre. As shown in Table VII-5, by dividing the projected population in mobile homes by 2 person per unit and adjusting for occupancy, this population density would imply absorption of over 3,400 acres of land between 1990 and 2040.

- **Recreational Vehicles.** A sample of 7 recreational vehicle parks built since 1984, dispersed around the County but primary located in Mesa, were used to derive an average density of 12.84 spaces per acre. As shown in Table VII-6, by dividing the projected population in RVs by 2 persons per units and adjusting for occupancy, this population density implies absorption of over 2,200 acres of land between 1990 and 2040.

Transient. A sampling of a mixture of hotels, motels, and resorts, all built since 1984, was used to derive an average density of 43.97 rooms per acre. Peak occupancy rates and population were used to derive an overall average population per room. This average is expected to trend downward slightly over time with the aging of the population. It ranges from 1.39 in 1990 to 1.28 in 2040. As shown in Table VII-7, these population per room and population density assumptions imply absorption of over 300 acres of land between 1990 and 2040.

4.5   PROJECTION MODEL OVERVIEW

The projection model developed by ESG to implement the RAZ-level projections of special population utilizes a series of Microsoft Excel spreadsheets to bring together independent locational variables, location equations, and land use data. In the case of components of special populations where this approach was not applicable, other growth assumptions (known generators and additions to known generators) are coded into RAZ-oriented spreadsheets and combined with the others to project total special populations by RAZ.

In general each spreadsheet is organized into four or five sections horizontal across the top, with RAZ number running down the first column. Other components of the spreadsheets are as follows:

- The first section includes the 1990 RAZ-level estimates for the particular variable. Often this included the figure developed by MAG, in addition to estimates prepared by ESG using the inventory information.

- The second section contains the independent variables used in the projection for the specific component of special populations, if any. These include the accessibility indices described above.

- The third section is optional, as it contains land use information used in the RAZ-level allocation. Only the seasonal and transient non-resident spreadsheet models contain this information.

- Section four calculates raw attraction scores for each RAZ based on the regression equations for that variable, and the independent variables included in the first section. The section also includes another column for these "scores" where thresholds and weighing factors are sometimes applied.

- The fifth sections contains known additions to the particular special population group. These additions are allocated to growth in the 1990 to 1995, and 1995 to 2000 time periods.

- The last section translates the raw scores into projected population by time period (five year increments from 1995 to 2040). These data are benchmarked to the county-level growth projections for each component of special populations.

The following sections list and briefly describe the spreadsheet provided for each special population group.

Group Quarters. The group quarter projections are implemented using six spreadsheets:

- GrpQtr90.xls
- Jails.xls
- Military.xls
- Dorms.xls
- Nursing.xls
- GroupOut.xls

GrpQtr90.xls is the spreadsheet developed to estimate RAZ-level group quarters population by type. Inventory-based estimates by ESG are used to distribute MAGs/Census total group quarters population among the components. This spreadsheet should be replaced by actual census data aggregated to RAZs.

Jails.xls, Military.xls, Dorms.xls, Nursing.xls are RAZ-oriented spreadsheets simply used to incorporate known additions, and pro rata distributions for these components of group quarters population. As discussed above, none of these components lend themselves to projection on the basis of statistical relationships. However, it is still worthwhile to project the components of group quarters, and aggregate them to total group quarters population. Assumptions for Military and Jail populations have been discussed above, and assumptions for Dormitory populations are shown in Table VII-8.

GrpQtrFU.xls combines the result of the four spreadsheet above, calculates "other" group quarters based on the distribution of the first four contributors, and added all of them together to yield total group quarters projections by RAZ.

Seasonal. Seasonal population in mobile homes and RVs at the RAZ level is projected in Seasonal.xls. This spreadsheet calculates both mobile home and RV population together. The form of the spreadsheet is as described above in the general description section. Seasonal population of "other" housing is projected in SeasOthr.xls. This spreadsheet incorporated known additions to seasonal housing (based on retirement area inventory). The balance of growth is allocated to RAZs based on projected total inventory, and 1990 vacancy status data. This approach could be further refined in subsequent projects by projecting vacancy status data for each RAZ over the 1995 to 2040 projection period.

Transient. The spreadsheet Transnt.xls implements the RAZ level projection of transient non-resident population. The structure is described in the general section, except that multiple locational "scores" are calculated within one spreadsheet, corresponding with the three primary components of transient population: leisure, group and business travels. It was necessary to combine these into a weighted composite score by RAZ because the land uses, hotel/motel and resort, would both contain all three type of travelers.

5.0 RAZ PROJECTIONS

Tables VII-9 through VII-12 show the RAZ-level projections of resident group quarters, non-resident seasonal, and non-resident transient populations respectively. As noted in the introduction to this paper, these projections are provided for illustrative purposes only, and are not approved for official use.

TABLE VII-1
MAJOR RETIREMENT COMMUNITIES
MARICOPA COUNTY

Development / (City) RAZ	Year Founded	Total Acres	Residential Acres	Residential Units Planned	Residential Units Built	Buildout Population
Sun City 237	1960	8,900	n/a	27,353	Built Out	38,126
Sun City West 221	1978	6,575	3,600	15,500	11,537	21,700
Sun Lakes 325/326	1973	3,322	2,441	12,800	4,143	19,200
Dreamland Villa (Mesa) 299	1959	640	n/a	5,000	Built Out	9,500
Westbrook Village (Peoria) 215	1983	1,326	967	4,000	2,533	5,600
Leisure World (Mesa) 299	1973	1,120	495	2,564	Built Out	4,500
Sunland Village 299	1974	570	570	2,549	Built Out	3,608
Sunland Village East (Mesa) 321	1985	582	446	2,491	1,192	3,487
Fountain of the Sun (Mesa) 300	1972	582	454	2,309	2,190	3,233
Sunbird Golf Resort (Chandler) 328	1987	652	320	1,717	750	2,404
Youngtown 236	1954	717	493	1,670	Built Out	2,542
Sun Village (Surprise) 232	1988	335	231	1,356	692	2,500
Rio Verde 231	1973	709	544	1,051	650	2,812

Sources:
    Canyon Research, 1993
    Charlotte Welch, Retirement Communities in Maricopa County, 1992
    Maricopa Co. Dept. of Planning & Development, Large Scale Developments, 1992
    U.S. Bureau of the Census, 1990.
    Economic Strategies Group, 1993

TABLE VII-2
ATTENDANCE AT MAJOR PLACES OF INTEREST
IN MARICOPA COUNTY

Place	Number of Adults	Percent	TAZ
Phoenix Zoo	599,700	37%	704
Desert Botanical Garden	246,900	15	704
Heard Museum	207,400	13	622
Phoenix Art Museum	151,000	9	622
Arizona Museum of Science & Technology	123,100	8	756
Phoenix Civic Plaza	472,200	30	756
Celebrity Theatre	202,600	13	699
Scottsdale Center for the Arts	188,500	12	578
Grady Gammage Auditorium	180,800	12	882
Sundome	135,800	9	149
Symphony Hall	135,200	9	756
Mesa Amphitheatre	87,200	6	898
Phoenix Performing Arts Center	52,500	3	623
Phoenix Little Theatre	96,200	6	622
Arizona Theatre Company	69,600	5	619
Ballet Arizona	50,300	3	507
Arizona Opera Company	27,100	2	497
Rawhide	338,800	21	173
Mesa Golfland & Sunsplash	215,200	13	1020
Island of Big Surf	160,300	10	779
Water World USA	138,800	9	86
Phoenix Suns	328,300	21	756
Phoenix Cardinals	306,900	20	840
Phoenix Greyhound Park	260,900	17	770
Turf Paradise	136,900	9	191
Phoenix FIrebirds	90,600	6	704
Phoenix International Raceway	68,400	4	1161

Source: The Arizona Republic/The Phoenix Gazette, Inside Phoenix, 1992,1990.

Note:
 Attendance by any household member in the past 12 months.
 Percentages add to more than total due to multiple responses.

TABLE VII-3

SQUARE FOOTAGE OF MAJOR SHOPPING CENTERS
IN MARICOPA COUNTY

Shopping Center	Building Area	TAZ
Biltmore Fashion Park	428,000	461
The Borgata	90,800	421
Camelview Plaza	389,200	515
Chris-Town	1,069,300	445
Colonnade Mall	531,300	497
Fiesta Mall	1,221,700	1014
Fifth Avenue Area Shops	500,000	516
Galleria	420,000	518
Los Arcos Mall	491,700	707
Maryvale Mall	605,500	484
Metrocenter	2,191,700	314
Paradise Valley Mall	1,248,200	253
Park Central Mall	595,500	553
Scottsdale Fashion Square	839,100	515
Scottsdale Pavilions	925,000	425
Superstition Springs	1,300,000	1037
Thomas Mall*		641
Tower Plaza	620,400	639
Town & Country	386,300	500
Tri-City Mall	459,000	892
VF Factory Outlet	165,600	1040
Valley West Mall	475,700	372
Westridge Mall	762,900	537

Source: The Arizona Republic/The Phoenix Gazette, Inside Phoenix, 1992.

Note:
   Attendance by any household member in the past 12 months.
   Percentages add to more than total due to multiple responses.
   *Thomas Mall is temporarily closed - no square feet included.

TABLE VII-4

POPULATION DENSITY ASSUMPTIONS
AND RESULTING LAND ABSORPTION FOR GROUP QUARTERS POPULATIONS

	Jails				Dormitories			Nursing Homes		
	Population		Suburb	Downtown	Population		Acres	Population		Acres
Year	Level	Increase	Acres	Acres	Level	Increase	Needed	Level	Increase	Needed
1990	8,472				5,256			8,659		
1995	9,580	1,108	53.406	0.626	4,868	-388	0.000	9,510	851	30.833
2000	10,839	1,259	60.684	0.711	5,487	619	3.850	10,020	510	18.478
2005	12,102	1,263	60.877	0.713	6,569	1,082	16.394	10,521	501	18.152
2010	13,425	1,323	63.769	0.747	7,723	1,154	17.485	11,592	1,071	38.804
2015	14,868	1,443	69.553	0.815	8,509	786	11.909	13,613	2,021	73.225
2020	16,435	1,567	75.530	0.885	8,737	228	3.455	16,239	2,626	95.145
2025	18,087	1,652	79.627	0.933	9,366	629	9.530	19,844	3,605	130.616
2030	19,782	1,695	81.700	0.957	10,447	1,081	16.379	23,867	4,023	145.761
2035	21,491	1,709	82.375	0.965	11,702	1,255	19.015	26,639	2,772	100.435
2040	23,187	1,696	81.748	0.958	12,702	1,000	15.152	28,235	1,596	57.826
Total			709.271	8.308			113.168			709.275
Persons/Acre			15.56	442.80			66.00			27.60

Source: Economic Strategies Group, 1993.

TABLE VII-5

SEASONAL POPULATION IN MOBILE HOMES
DENSITY ASSUMPTIONS AND RESULTING LAND ABSORPTION

| Year | Mobile Home Units | | | | Seasonal Population | | Acres |
	Inventory	Occupancy	Seasonal	Vacant	Level	Increase	Needed
1990	53,871	48,484	21,818	5,387	37,308		
1995	57,937	50,405	22,682	7,532	38,787	1,479	111.51
2000	59,663	51,906	23,358	7,756	39,942	1,155	87.10
2005	61,891	53,845	24,230	8,046	41,434	1,492	112.52
2010	67,191	58,456	26,305	8,735	44,982	3,548	267.57
2015	78,076	67,926	30,567	10,150	52,269	7,287	549.55
2020	89,161	77,570	34,906	11,591	59,690	7,421	559.65
2025	97,092	84,470	38,012	12,622	65,000	5,310	400.45
2030	107,861	93,839	42,227	14,022	72,209	7,209	543.67
2035	115,940	100,868	45,391	15,072	77,618	5,409	407.92
2040	124,150	108,010	48,605	16,139	83,114	5,496	414.48
Total							3454.42
Persons/Acre							13.26

Source: Economic Strategies Group, 1993.

TABLE VII-6

SEASONAL POPULATION IN RECREATIONAL VEHICLES
DENSITY ASSUMPTIONS AND RESULTING LAND ABSORPTION

| Year | RV Spaces | | | | Seasonal Population | | Acres |
	Inventory	Occupancy	Seasonal	Vacant	Level	Increase	Needed
1990	32,523	30,897	26,262	1,626	52,525		
1995	34,829	31,346	25,704	3,483	51,407	(1,118)	0.00
2000	35,865	32,279	26,469	3,587	52,937	1,530	16.06
2005	37,205	33,484	27,457	3,720	54,914	1,977	76.99
2010	40,391	36,352	29,809	4,039	59,617	4,703	183.14
2015	46,934	42,241	34,638	4,693	69,275	9,658	376.09
2020	53,598	48,238	39,555	5,360	79,110	9,835	382.98
2025	58,366	52,529	43,074	5,837	86,148	7,038	274.07
2030	64,838	58,354	47,851	6,484	95,701	9,553	372.00
2035	69,696	62,726	51,436	6,970	102,871	7,170	279.21
2040	74,630	67,167	55,077	7,463	110,154	7,283	283.61
Total							2244.13
Persons/Acre							25.68

Source: Economic Strategies Group, 1993.

TABLE VII-7

TRANSIENT POPULATION
DENSITY ASSUMPTIONS AND RESULTING LAND ABSORPTION

Year	Occupied Rooms	Population per Room	Transient Population Level	Transient Population Increase	Rooms Needed	Acres Needed
1990	21,489	1.39	29,950			
1995	23,485	1.38	32,432	2,482	1,797	40.88
2000	25,974	1.36	35,337	2,905	2,135	48.56
2005	28,100	1.35	37,811	2,474	1,839	41.81
2010	29,708	1.34	39,715	1,904	1,424	32.39
2015	31,015	1.33	41,229	1,514	1,139	25.90
2020	32,347	1.32	42,766	1,537	1,163	26.44
2025	33,890	1.31	44,419	1,653	1,261	28.68
2030	35,413	1.30	46,046	1,627	1,251	28.46
2035	36,877	1.29	47,608	1,562	1,210	27.52
2040	38,260	1.28	49,083	1,475	1,150	26.15
Total						326.79
Rooms/Acre						43.97

Source: Economic Strategies Group, 1993.

TABLE VII-8

GROWTH ASSUMPTIONS FOR KNOWN
DORMITORY POPULATION GENERATORS

	Total	ASU	%	Grand Canyon	%	Williams Re-Use	%
1993	4,242	3,661	0.8630	581	0.1370	0	0.0000
1995	4,868	4,170	0.8566	594	0.1220	104	0.0214
2000	5,487	4,545	0.8283	628	0.1145	314	0.0572
2005	6,569	5,594	0.8516	661	0.1006	314	0.0478
2010	7,723	6,577	0.8516	777	0.1006	369	0.0478
2015	8,509	7,246	0.8516	856	0.1006	407	0.0478
2020	8,737	7,440	0.8516	879	0.1006	418	0.0478
2025	9,366	7,976	0.8516	942	0.1006	448	0.0478
2030	10,447	8,896	0.8516	1,051	0.1006	499	0.0478
2035	11,702	9,965	0.8516	1,178	0.1006	559	0.0478
2040	12,702	10,817	0.8516	1,278	0.1006	607	0.0478

Sources:
  Arizona State University, 1993.
  Economic Strategies Group, 1993.

TABLE VII-9

PROJECTED GROUP QUARTERS POPULATION BY RAZ
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
						Projected Total Group Quarters Populations					
201	294	313	332	351	372	399	428	461	495	524	548
202	0	0	0	0	0	0	0	0	0	0	0
203	23	24	26	28	29	31	32	34	35	37	38
204	43	46	48	50	55	61	69	79	90	98	104
205	1,223	1,446	1,649	1,870	2,096	2,340	2,608	2,882	3,160	3,447	3,745
206	0	0	0	0	0	0	0	0	0	0	0
207	0	0	39	41	45	53	63	76	90	100	107
208	0	0	0	0	0	0	0	0	0	0	0
209	10	11	11	12	13	13	14	15	15	16	17
210	0	0	0	0	0	0	0	0	0	0	0
211	0	0	0	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0	0	0	0
213	0	0	0	0	0	0	0	0	0	0	0
214	8	8	9	10	10	11	11	12	12	13	13
215	232	251	261	274	298	339	391	458	530	584	619
216	0	0	0	0	0	0	0	0	0	0	0
217	0	0	0	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0	0	0	0
219	0	0	0	0	0	0	0	0	0	0	0
220	0	0	0	0	0	0	0	0	0	0	0
221	70	77	79	82	92	110	134	166	201	226	241
222	34	37	38	39	44	53	64	80	97	109	116
223	440	519	591	668	748	834	928	1,025	1,123	1,223	1,328
224	6	6	7	7	8	8	8	9	9	10	10
225	0	0	0	0	0	0	0	0	0	0	0
226	0	0	0	0	0	0	0	0	0	0	0
227	23	24	26	28	29	31	32	34	35	37	38
228	0	0	0	0	0	0	0	0	0	0	0
229	4	4	5	5	5	5	6	6	6	6	7

TABLE VII-9 (Continued)
PROJECTED GROUP QUARTERS POPULATION BY RAZ
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
					Projected Total Group Quarters Populations						
230	0	0	0	0	0	0	0	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0
232	14	15	16	17	18	19	20	21	22	22	23
233	88	93	99	105	111	117	123	129	135	141	147
234	138	260	370	388	424	482	555	647	747	823	874
235	54	57	61	65	68	72	76	79	83	87	90
236	194	213	217	226	253	303	369	457	553	623	666
237	599	652	673	703	773	894	1,050	1,252	1,474	1,636	1,741
238	455	496	511	533	588	685	809	972	1,150	1,280	1,363
239	266	292	501	537	601	698	819	971	1,135	1,263	1,355
240	732	786	825	868	934	1,029	1,144	1,286	1,437	1,555	1,639
241	59	63	67	71	74	78	83	87	91	95	98
242	0	0	0	0	0	0	0	0	0	0	0
243	67	73	76	79	87	101	118	142	167	185	197
244	414	447	466	488	531	601	688	800	922	1,012	1,073
245	227	248	255	265	294	346	413	501	597	667	712
246	168	184	188	195	219	262	319	395	478	538	576
247	77	85	86	90	100	120	147	182	220	247	265
248	186	204	208	216	242	290	353	437	529	596	637
249	61	65	69	73	77	81	85	90	94	98	102
250	0	0	97	102	112	132	156	189	225	251	267
251	9	10	10	11	11	12	13	13	14	14	15
252	0	0	0	0	0	0	0	0	0	0	0
253	16	17	18	19	20	21	22	24	25	26	27
254	14	15	16	17	18	19	20	21	22	22	23
255	0	0	0	0	0	0	0	0	0	0	0
256	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002
257	0	0	0	0	0	0	0	0	0	0	0
258	632	694	708	735	823	987	1,202	1,488	1,803	2,029	2,169

TABLE VII-9 (Continued)

PROJECTED GROUP QUARTERS POPULATION BY RAZ

1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
					Projected Total Group Quarters Populations						
230	0	0	0	0	0	0	0	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0
232	14	15	16	17	18	19	20	21	22	22	23
233	88	93	99	105	111	117	123	129	135	141	147
234	138	260	370	388	424	482	555	647	747	823	874
235	54	57	61	65	68	72	76	79	83	87	90
236	194	213	217	226	253	303	369	457	553	623	666
237	599	652	673	703	773	894	1,050	1,252	1,474	1,636	1,741
238	455	496	511	533	588	685	809	972	1,150	1,280	1,363
239	266	292	501	537	601	698	819	971	1,135	1,263	1,355
240	732	786	825	868	934	1,029	1,144	1,286	1,437	1,555	1,639
241	59	63	67	71	74	78	83	87	91	95	98
242	0	0	0	0	0	0	0	0	0	0	0
243	67	73	76	79	87	101	118	142	167	185	197
244	414	447	466	488	531	601	688	800	922	1,012	1,073
245	227	248	255	265	294	346	413	501	597	667	712
246	168	184	188	195	219	262	319	395	478	538	576
247	77	85	86	90	100	120	147	182	220	247	265
248	186	204	208	216	242	290	353	437	529	596	637
249	61	65	69	73	77	81	85	90	94	98	102
250	0	0	97	102	112	132	156	189	225	251	267
251	9	10	10	11	11	12	13	13	14	14	15
252	0	0	0	0	0	0	0	0	0	0	0
253	16	17	18	19	20	21	22	24	25	26	27
254	14	15	16	17	18	19	20	21	22	22	23
255	0	0	0	0	0	0	0	0	0	0	0
256	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002	1,002
257	0	0	0	0	0	0	0	0	0	0	0
258	632	694	708	735	823	987	1,202	1,488	1,803	2,029	2,169

TABLE VII-9 (Continued)

PROJECTED GROUP QUARTERS POPULATION BY RAZ

1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
					Projected Total Group Quarters Populations						
259	712	660	705	750	1,013	1,138	1,195	1,309	1,484	1,677	1,835
260	533	584	597	621	692	822	992	1,216	1,462	1,640	1,751
261	370	401	416	436	476	541	623	729	845	930	987
262	0	0	0	0	0	0	0	0	0	0	0
263	6	6	7	7	8	8	8	9	9	10	10
264	95	101	107	114	120	126	133	140	146	152	159
265	0	0	0	0	0	0	0	0	0	0	0
266	7	7	8	8	9	9	10	10	11	11	12
267	17	18	19	20	21	23	24	25	26	27	28
268	38	40	43	45	48	51	53	56	58	61	63
269	75	80	85	90	95	100	105	110	115	120	125
270	982	1,062	1,105	1,158	1,261	1,426	1,633	1,898	2,185	2,400	2,543
271	634	686	713	747	814	925	1,066	1,246	1,442	1,587	1,684
272	634	694	710	738	823	976	1,175	1,439	1,729	1,938	2,070
273	255	274	287	302	326	362	407	463	523	569	600
274	0	0	0	0	0	0	0	0	0	0	0
275	3,854	4,306	4,771	5,268	5,790	6,370	7,010	7,681	8,366	9,038	9,700
276	446	480	503	528	570	634	713	812	918	999	1,055
277	0	0	0	0	0	0	0	0	0	0	0
278	78	83	88	93	98	104	109	115	120	125	130
279	0	0	0	0	0	0	0	0	0	0	0
280	2,034	2,426	2,779	3,165	3,561	3,989	4,459	4,941	5,430	5,935	6,460
281	214	227	242	256	270	284	299	315	329	344	357
282	47	50	53	56	59	62	66	69	72	75	78
283	52	55	59	62	66	69	73	76	80	83	87
284	1	1	1	1	1	1	1	1	2	2	2
285	1,970	2,350	2,691	3,065	3,449	3,863	4,318	4,785	5,259	5,748	6,256
286	134	144	151	159	171	188	210	235	263	285	300
287	2,408	2,671	2,928	3,193	3,464	3,755	4,070	4,394	4,719	5,043	5,368

TABLE VII-9 (Continued)
PROJECTED GROUP QUARTERS POPULATION BY RAZ
1995 - 2040

RAZ	Estimated 1990	Projected Total Group Quarters Populations									
		1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
288	4,900	4,275	4,770	6,097	7,146	7,966	8,240	8,896	9,976	11,253	12,333
289	220	239	247	258	283	325	378	446	521	576	612
290	484	523	544	570	621	703	806	937	1,081	1,187	1,258
291	0	0	0	0	0	0	0	0	0	0	0
292	124	132	140	148	156	165	174	182	191	199	207
293	70	77	79	82	91	109	131	161	194	217	232
294	8	8	9	10	10	11	11	12	12	13	13
295	0	0	0	0	0	0	0	0	0	0	0
296	408	439	460	483	521	580	652	741	838	912	963
297	125	137	141	147	162	189	225	271	321	358	381
298	82	90	92	96	107	126	151	184	220	246	263
299	762	837	853	886	992	1,190	1,449	1,793	2,173	2,445	2,614
300	18	19	20	22	23	24	25	26	28	29	30
301	20	22	23	24	26	32	39	48	58	65	70
302	17	18	19	20	21	23	24	25	26	27	28
303	0	0	0	0	0	0	0	0	0	0	0
304	0	0	0	0	0	0	0	0	0	0	0
305	91	100	102	105	118	142	172	213	259	291	311
306	518	563	582	607	669	774	909	1,085	1,278	1,419	1,510
307	26	28	29	31	33	35	36	38	40	42	43
308	83	91	93	97	108	130	158	194	235	264	282
309	238	264	279	298	330	378	438	513	594	657	702
310	43	46	49	51	54	57	60	63	66	69	72
311	0	0	0	0	0	0	0	0	0	0	0
312	0	0	0	0	0	0	0	0	0	0	0
313	1	1	1	1	1	1	1	1	2	2	2
314	0	0	0	0	0	0	0	0	0	0	0
315	0	0	0	0	0	0	0	0	0	0	0
316	310	635	911	1,200	1,331	1,566	1,871	2,272	2,712	3,031	3,233

TABLE VII-9 (Continued)
PROJECTED GROUP QUARTERS POPULATION BY RAZ
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
					Projected Total Group Quarters Populations						
317	16	18	18	19	21	25	31	38	46	52	55
318	0	0	0	0	0	0	0	0	0	0	0
319	0	0	0	0	0	0	0	0	0	0	0
320	314	104	377	380	505	560	580	625	696	781	853
321	16	17	18	19	20	21	22	24	25	26	27
322	0	0	0	0	0	0	0	0	0	0	0
323	0	0	0	0	0	0	0	0	0	0	0
324	62	68	69	72	81	97	118	146	176	199	212
325	0	0	0	0	0	0	0	0	0	0	0
326	0	0	0	0	0	0	0	0	0	0	0
327	0	0	0	0	0	0	0	0	0	0	0
328	0	0	0	0	0	0	0	0	0	0	0
329	323	343	365	386	408	429	452	475	497	518	539
330	67	71	76	80	85	89	94	98	103	108	112
331	5	5	6	6	6	7	7	7	8	8	8
332	11	12	12	13	14	15	15	16	17	18	18
333	95	101	107	114	120	126	133	140	146	152	159
334	0	0	0	0	0	0	0	0	0	0	0
335	156	165	176	187	197	207	218	229	240	250	260
336	0	0	0	0	0	0	0	0	0	0	0
337	0	0	0	0	0	0	0	0	0	0	0
339	162	172	183	194	204	215	227	238	249	260	270
340	0	0	0	0	0	0	0	0	0	0	0
341	55	58	62	66	69	73	77	81	85	88	92
Total	33,310	35,822	39,640	43,918	48,964	54,851	61,048	68,808	77,530	85,203	91,419

Source: Economic Strategies Group, 1993.

TABLE VII-10

PROJECTED SEASONAL POPULATION IN MOBILE HOMES AND RECREATIONAL VEHICLE

1995 - 2040

RAZ	Estimated 1990	Projected Seasonal Population									
		1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
201	187	368	887	1,257	1,364	1,585	1,810	1,971	2,190	2,354	2,521
202	100	103	106	109	119	138	157	171	190	205	219
203	0	0	0	0	0	0	0	0	0	0	0
204	115	110	112	116	126	146	167	182	202	217	233
205	0	0	0	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0	0	0	0
207	102	107	110	113	123	143	163	178	197	212	227
208	0	0	0	0	0	0	0	0	0	0	0
209	0	0	0	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0	0	0	0
211	0	0	0	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0	0	0	0
213	0	0	0	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0	0	0	0
215	1,908	1,780	1,821	1,882	2,044	2,375	2,712	2,953	3,281	3,526	3,776
216	0	0	0	0	0	0	0	0	0	0	0
217	0	0	0	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0	0	0	0
219	0	0	0	0	0	0	0	0	0	0	0
220	0	0	0	0	0	0	0	0	0	0	0
221	0	0	0	0	0	0	0	0	0	0	0
222	0	0	0	0	0	0	0	0	0	0	0
223	865	858	878	908	985	1,145	1,308	1,424	1,582	1,700	1,821
224	1,526	1,462	1,496	1,547	1,679	1,951	2,228	2,426	2,695	2,897	3,102
225	818	791	809	837	909	1,056	1,206	1,313	1,458	1,568	1,679
226	1,558	1,700	1,739	1,798	1,952	2,268	2,590	2,820	3,133	3,368	3,606
227	1,239	1,348	1,378	1,425	1,547	1,798	2,053	2,236	2,484	2,670	2,859
228	0	0	0	0	0	0	0	0	0	0	0
229	0	0	0	0	0	0	0	0	0	0	0

TABLE VII-10 (Continued)

PROJECTED SEASONAL POPULATION IN MOBILE HOMES AND RECREATIONAL VEHICLE
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
230	0	0	0	0	0	0	0	0	0	0	0
231	0	0	0	0	0	0	0	0	0	0	0
232	782	1,023	1,217	1,258	1,366	1,587	1,812	1,973	2,192	2,357	2,523
233	0	0	0	0	0	0	0	0	0	0	0
234	2,416	2,254	2,306	2,384	2,588	3,007	3,434	3,740	4,154	4,466	4,782
235	3,177	2,998	3,066	3,170	3,442	3,999	4,567	4,973	5,525	5,939	6,359
236	0	0	0	0	0	0	0	0	0	0	0
237	333	364	372	385	418	485	554	603	670	721	772
238	1,825	1,960	2,005	2,073	2,250	2,615	2,986	3,251	3,612	3,883	4,157
239	889	969	991	1,025	1,112	1,293	1,476	1,607	1,786	1,919	2,055
240	0	0	0	0	0	0	0	0	0	0	0
241	0	0	0	0	0	0	0	0	0	0	0
242	703	723	739	764	830	964	1,101	1,199	1,332	1,432	1,533
243	528	537	549	568	616	716	818	891	989	1,064	1,139
244	792	861	880	910	988	1,148	1,311	1,428	1,586	1,705	1,826
245	711	767	784	811	880	1,023	1,168	1,272	1,413	1,519	1,626
246	0	0	0	0	0	0	0	0	0	0	0
247	0	0	0	0	0	0	0	0	0	0	0
248	0	0	0	0	0	0	0	0	0	0	0
249	0	0	0	0	0	0	0	0	0	0	0
250	0	0	0	0	0	0	0	0	0	0	0
251	0	0	0	0	0	0	0	0	0	0	0
252	0	0	0	0	0	0	0	0	0	0	0
253	0	0	0	0	0	0	0	0	0	0	0
254	0	0	0	0	0	0	0	0	0	0	0
255	229	247	253	261	284	330	376	410	455	490	524
256	0	0	0	0	0	0	0	0	0	0	0
257	233	255	260	269	292	340	388	423	469	505	540
258	3,108	3,383	3,460	3,578	3,884	4,513	5,154	5,613	6,235	6,702	7,177

Projected Seasonal Population

TABLE VII-10 (Continued)
PROJECTED SEASONAL POPULATION IN MOBILE HOMES AND RECREATIONAL VEHICLE
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
259	797	862	881	911	989	1,149	1,313	1,429	1,588	1,707	1,828
260	376	400	409	423	459	534	610	664	737	793	849
261	41	45	46	48	52	60	69	75	83	89	96
262	0	0	0	0	0	0	0	0	0	0	0
263	0	0	0	0	0	0	0	0	0	0	0
264	2,659	2,642	2,702	2,794	3,033	3,524	4,025	4,383	4,869	5,233	5,604
265	0	0	0	0	0	0	0	0	0	0	0
266	0	0	0	0	0	0	0	0	0	0	0
267	0	0	0	0	0	0	0	0	0	0	0
268	885	966	988	1,022	1,109	1,289	1,472	1,603	1,781	1,914	2,049
269	1,565	1,653	1,691	1,748	1,898	2,205	2,518	2,742	3,047	3,275	3,507
270	345	362	370	382	415	482	551	600	666	716	767
271	215	227	232	240	261	303	346	377	419	450	482
272	439	474	484	501	544	632	721	786	873	938	1,005
273	394	423	432	447	485	564	644	701	779	838	897
274	57	58	60	62	67	78	89	97	107	115	123
275	228	243	249	257	279	325	371	404	448	482	516
276	916	988	1,010	1,044	1,134	1,317	1,504	1,638	1,820	1,956	2,095
277	0	0	0	0	0	0	0	0	0	0	0
278	205	211	216	223	243	282	322	350	389	418	448
279	0	0	0	0	0	0	0	0	0	0	0
280	564	527	539	557	605	702	802	874	970	1,043	1,117
281	26	28	29	30	32	38	43	47	52	56	60
282	423	459	469	485	526	612	699	761	845	908	973
283	69	75	77	80	86	100	115	125	139	149	159
284	26	28	29	30	32	38	43	47	52	56	60
285	429	455	465	481	522	606	693	754	838	901	964
286	35	39	39	41	44	51	59	64	71	76	82
287	691	740	757	783	850	988	1,128	1,228	1,364	1,467	1,570

TABLE VII-10 (Continued)

PROJECTED SEASONAL POPULATION IN MOBILE HOMES AND RECREATIONAL VEHICLE
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
288	1,383	1,437	1,469	1,519	1,649	1,916	2,189	2,383	2,648	2,846	3,047
289	2,085	2,198	2,248	2,324	2,523	2,932	3,348	3,646	4,050	4,354	4,662
290	661	695	711	735	798	927	1,059	1,153	1,281	1,377	1,474
291	940	1,023	1,046	1,081	1,174	1,364	1,558	1,696	1,884	2,026	2,169
292	841	817	835	864	938	1,090	1,244	1,355	1,505	1,618	1,732
293	415	453	463	479	520	604	690	752	835	897	961
294	193	211	215	223	242	281	321	349	388	417	447
295	8,913	8,680	8,878	9,179	9,965	11,579	13,223	14,400	15,996	17,195	18,412
296	844	893	914	945	1,026	1,192	1,361	1,482	1,646	1,770	1,895
297	2,452	2,500	2,556	2,643	2,870	3,334	3,808	4,147	4,606	4,952	5,302
298	13,603	13,159	13,458	13,915	15,107	17,554	20,046	21,830	24,251	26,067	27,913
299	9,527	9,107	9,314	9,630	10,455	12,149	13,874	15,108	16,783	18,041	19,318
300	12,211	11,946	12,217	12,632	13,714	15,935	18,198	19,817	22,014	23,664	25,339
301	0	0	0	0	0	0	0	0	0	0	0
302	0	0	0	0	0	0	0	0	0	0	0
303	0	0	0	0	0	0	0	0	0	0	0
304	115	126	129	133	145	168	192	209	232	249	267
305	457	499	510	528	573	666	760	828	920	989	1,059
306	555	606	620	641	696	809	923	1,006	1,117	1,201	1,286
307	0	0	0	0	0	0	0	0	0	0	0
308	0	0	0	0	0	0	0	0	0	0	0
309	416	442	453	468	508	590	674	734	815	877	939
310	394	420	429	444	482	560	640	697	774	832	891
311	29	32	33	34	37	43	49	53	59	63	68
312	0	0	0	0	0	0	0	0	0	0	0
313	0	0	0	0	0	0	0	0	0	0	0
314	0	0	0	0	0	0	0	0	0	0	0
315	0	0	0	0	0	0	0	0	0	0	0
316	70	73	75	77	84	98	112	122	135	145	155

TABLE VII-10 (Continued)

PROJECTED SEASONAL POPULATION IN MOBILE HOMES AND RECREATIONAL VEHICLE
1995 - 2040

RAZ	Estimated 1990	Projected Seasonal Population									
		1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
317	718	776	794	821	891	1,035	1,182	1,288	1,430	1,538	1,646
318	0	0	0	0	0	0	0	0	0	0	0
319	0	0	0	0	0	0	0	0	0	0	0
320	0	0	0	0	0	0	0	0	0	0	0
321	1,671	1,559	1,595	1,649	1,790	2,080	2,375	2,586	2,873	3,088	3,307
322	0	0	0	0	0	0	0	0	0	0	0
323	0	0	0	0	0	0	0	0	0	0	0
324	0	0	0	0	0	0	0	0	0	0	0
325	314	343	351	363	394	458	523	569	632	680	728
326	0	0	0	0	0	0	0	0	0	0	0
327	0	0	0	0	0	0	0	0	0	0	0
328	0	0	0	0	0	0	0	0	0	0	0
329	42	39	40	42	45	52	60	65	73	78	83
330	0	0	0	0	0	0	0	0	0	0	0
331	0	51	52	54	59	68	78	85	94	101	108
332	1,169	1,148	1,174	1,214	1,318	1,531	1,749	1,904	2,116	2,274	2,435
333	355	386	395	408	443	515	588	641	712	765	819
334	119	130	133	137	149	173	198	215	239	257	275
335	0	0	0	0	0	0	0	0	0	0	0
336	0	0	0	0	0	0	0	0	0	0	0
337	0	0	0	0	0	0	0	0	0	0	0
339	139	148	152	157	170	198	226	246	274	294	315
340	0	0	0	0	0	0	0	0	0	0	0
341	0	0	0	0	0	0	0	0	0	0	0
Total	96,161	96,771	99,651	103,374	112,227	130,407	148,921	162,170	180,154	193,651	207,361

Source:
Economic Strategies Group, 1993.

TABLE VII-11
PROJECTED SEASONAL POPULATION IN "OTHER" HOUSING
1995 - 2020

RAZ	Estimated 1990	Projected Seasonal Population					
		1995	2000	2005	2010	2015	2020
201	481	535	594	671	791	932	1,091
202	0	2	4	4	5	5	5
203	36	44	49	50	50	50	50
204	180	184	187	189	191	192	193
205	61	74	107	118	130	141	155
206	139	155	273	356	452	559	743
207	151	200	240	271	325	397	483
208	580	641	704	772	839	914	992
209	182	281	350	550	1,160	2,101	2,652
210	26	88	141	209	278	374	477
211	3	6	10	13	17	21	26
212	53	54	67	79	84	92	115
213	0	0	0	0	0	1	1
214	12	13	16	55	168	346	531
215	719	1,554	2,765	4,247	5,201	6,058	6,869
216	0	31	66	109	175	286	443
217	3	8	17	28	41	58	75
218	31	91	119	152	205	269	330
219	26	31	37	124	312	556	764
220	7	13	74	186	396	685	990
221	1,879	2,587	3,025	3,199	3,214	3,226	3,237
222	85	168	254	299	333	350	381
223	94	155	203	293	402	527	626
224	984	1,021	1,078	1,087	1,093	1,097	1,101
225	318	362	418	476	546	627	730
226	978	1,010	1,024	1,032	1,038	1,042	1,046
227	286	391	502	720	923	1,151	1,315
228	29	94	173	415	775	1,209	1,535
229	269	705	1,015	1,291	1,792	2,584	3,483

TABLE VII-11 (Continued)
PROJECTED SEASONAL POPULATION IN "OTHER" HOUSING
1995 - 2020

RAZ	Estimated 1990	Projected Seasonal Population					
		1995	2000	2005	2010	2015	2020
230	47	169	536	1,084	1,581	1,901	2,310
231	452	1,084	1,621	1,638	1,648	1,668	1,736
232	656	1,029	1,264	1,598	2,241	3,033	4,041
233	14	23	46	86	137	209	330
234	1,006	1,085	1,309	1,669	2,019	2,402	2,862
235	1,251	1,314	1,470	1,723	2,115	2,571	3,044
236	153	161	167	172	180	189	198
237	4,493	4,570	4,620	4,653	4,677	4,696	4,714
238	712	840	1,059	1,181	1,250	1,255	1,260
239	945	1,115	1,382	1,639	1,738	1,972	2,326
240	366	386	406	409	411	418	452
241	258	281	302	304	306	307	308
242	270	297	327	369	371	373	374
243	634	645	652	657	660	663	665
244	850	885	926	962	967	971	975
245	644	686	731	756	760	763	766
246	734	857	949	974	979	983	987
247	207	228	247	281	283	284	285
248	1,550	2,605	3,349	3,630	3,931	3,945	3,958
249	102	141	194	285	292	300	308
250	947	1,166	1,429	1,632	1,927	2,273	2,834
251	19	19	19	23	30	39	51
252	0	0	1	1	1	1	1
253	12	16	20	21	21	21	21
254	7	9	11	12	12	12	13
255	197	213	230	413	1,069	1,248	1,424
256	233	237	241	243	245	247	248
257	362	557	755	979	1,222	1,258	1,291
258	1,474	1,500	1,541	1,601	1,718	1,748	1,750

TABLE VII-11 (Continued)
PROJECTED SEASONAL POPULATION IN "OTHER" HOUSING
1995 - 2020

RAZ	Estimated 1990	Projected Seasonal Population					
		1995	2000	2005	2010	2015	2020
259	469	489	513	523	526	528	530
260	876	898	929	968	973	977	981
261	901	919	930	937	942	946	950
262	403	421	442	461	479	495	514
263	3,206	3,415	3,655	3,902	4,131	4,273	4,425
264	748	870	1,003	1,143	1,199	1,254	1,374
265	0	14	94	362	751	1,262	1,771
266	170	204	259	323	456	635	784
267	396	451	508	602	697	805	925
268	821	858	889	952	957	961	965
269	677	690	712	717	721	724	727
270	1,205	1,229	1,274	1,352	1,359	1,364	1,369
271	1,250	1,272	1,294	1,336	1,343	1,348	1,353
272	3,482	3,578	3,714	3,746	3,768	3,785	3,801
273	172	266	397	540	744	1,019	1,310
274	68	75	87	110	165	228	282
275	1,068	1,088	1,102	1,111	1,118	1,123	1,128
276	1,071	1,094	1,106	1,114	1,120	1,125	1,130
277	65	80	90	101	122	366	614
278	349	372	382	385	387	670	955
279	73	88	102	115	141	268	400
280	116	185	266	389	550	771	1,046
281	12	13	16	19	45	80	119
282	179	189	201	203	204	208	223
283	44	46	55	82	230	438	949
284	17	18	20	38	165	373	780
285	717	835	982	1,092	1,109	1,208	1,432
286	332	342	366	381	383	395	432
287	362	369	401	430	441	458	460

TABLE VII-11 (Continued)
PROJECTED SEASONAL POPULATION IN "OTHER" HOUSING
1995 - 2020

RAZ	Estimated 1990	Projected Seasonal Population					
		1995	2000	2005	2010	2015	2020
288	1,132	1,168	1,210	1,240	1,270	1,301	1,333
289	1,318	1,341	1,380	1,390	1,397	1,402	1,407
290	1,392	1,417	1,456	1,467	1,475	1,481	1,487
291	621	725	827	898	906	944	1,171
292	1,312	2,509	3,549	4,300	4,867	6,043	7,640
293	1,037	1,225	1,421	1,589	1,678	1,685	1,691
294	54	153	302	573	820	1,061	1,305
295	3,725	4,527	6,164	7,141	7,869	8,871	10,389
296	687	699	741	848	1,025	1,194	1,352
297	588	610	617	622	625	628	630
298	10,290	10,753	11,450	11,844	11,899	11,941	11,980
299	11,784	12,555	13,974	15,338	16,080	17,104	18,566
300	8,216	8,793	10,067	10,637	11,104	11,661	12,636
301	58	69	82	87	88	89	94
302	31	128	204	240	260	276	300
303	3	9	11	12	13	14	15
304	141	147	160	171	294	438	566
305	196	246	330	487	663	870	1,180
306	335	342	346	348	350	351	352
307	31	32	33	35	37	39	41
308	527	587	646	707	715	725	738
309	665	678	694	699	703	706	709
310	683	741	801	847	852	856	859
311	333	520	789	843	847	850	853
312	15	28	59	132	209	291	350
313	78	177	280	294	296	297	298
314	442	597	806	812	816	819	822
315	182	269	350	407	448	465	494
316	347	399	478	530	564	631	734

RAZ	Estimated 1990	Projected Seasonal Population					
		1995	2000	2005	2010	2015	2020
317	512	598	727	926	1,044	1,196	1,458
318	66	134	258	434	645	917	1,170
319	9	10	11	15	30	50	102
320	90	92	94	95	96	97	98
321	1,063	1,988	3,549	5,636	8,260	11,213	12,698
322	9	33	74	230	497	855	1,213
323	29	34	34	36	38	38	38
324	37	38	39	39	40	40	40
325	459	1,197	2,015	3,662	6,004	8,190	9,900
326	758	879	1,161	1,700	2,350	2,721	2,939
327	34	47	130	373	767	1,207	1,583
328	27	191	315	352	478	669	910
329	41	45	51	60	136	232	336
330	58	61	62	62	63	63	64
331	73	81	86	91	95	101	110
332	31	32	34	35	36	39	44
333	332	341	345	349	352	354	357
334	85	89	93	94	95	96	97
335	31	34	35	36	37	40	43
336	46	53	57	61	64	68	73
337	56	82	103	118	130	147	167
339	51	56	61	65	74	85	94
340	2	5	5	7	13	14	15
341	2	3	4	5	6	7	8
Total	95,580	110,551	129,675	148,443	168,473	191,159	215,249

Source:

Economic Strategies Group, 1993.

TABLE VII-12

PROJECTED TRANSIENT POPULATION

1995 - 2040

RAZ	Estimated 1990	Projected Transient Population									
		1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
201	68	69	70	72	73	74	75	75	76	77	78
202	0	0	0	0	0	0	0	0	0	0	0
203	0	0	0	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0	0	0	0
205	0	0	0	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0	0	0	0
207	15	240	245	250	255	258	260	263	265	268	271
208	226	230	235	240	244	247	249	252	254	257	259
209	181	191	195	228	257	284	311	341	373	404	434
210	0	0	0	0	0	0	0	0	0	0	0
211	0	0	0	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0	0	0	0
213	0	0	0	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0	0	0	0
215	0	0	0	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0	0	0	0
217	0	0	0	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0	0	0	0
219	0	0	0	0	0	0	0	0	0	0	0
220	0	0	0	0	0	0	0	0	0	0	0
221	0	14	20	65	106	144	182	224	268	312	354
222	0	9	238	267	294	318	343	370	399	428	455
223	26	27	27	28	28	29	29	29	29	30	30
224	150	153	156	159	162	164	166	167	169	171	172
225	49	50	51	52	53	54	54	55	55	56	56
226	468	477	487	496	506	511	516	522	527	532	537
227	0	11	16	51	83	113	143	175	210	245	277
228	0	9	13	43	70	95	120	147	177	206	233
229	10	10	10	11	11	11	11	11	11	11	11

TABLE VII-12 (Continued)
PROJECTED TRANSIENT POPULATION
1995 - 2040

RAZ	Estimated 1990	Projected Transient Population									
		1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
230	647	675	689	784	869	947	1,026	1,113	1,206	1,298	1,385
231	0	0	0	0	0	0	0	0	0	0	0
232	0	4	6	19	30	41	52	63	76	89	100
233	0	5	7	22	36	48	61	75	90	105	119
234	146	149	152	155	158	159	161	163	164	166	167
235	0	0	0	0	0	0	0	0	0	0	0
236	185	188	192	196	200	202	204	206	208	210	212
237	0	0	0	0	0	0	0	0	0	0	0
238	116	133	141	198	249	296	344	396	452	507	559
239	0	19	27	90	146	197	250	307	368	429	440
240	0	0	0	0	0	0	0	0	0	0	0
241	597	609	621	634	646	653	659	666	673	679	686
242	134	137	140	143	146	147	148	150	151	153	154
243	2,166	2,209	2,254	2,299	2,345	2,368	2,392	2,416	2,440	2,464	2,489
244	724	738	753	768	783	791	799	807	815	823	832
245	0	0	0	0	0	0	0	0	0	0	0
246	173	202	214	267	272	275	277	280	283	286	289
247	113	125	130	170	206	238	272	308	347	385	422
248	0	12	17	55	90	121	153	188	226	263	299
249	76	82	84	103	120	135	151	168	187	205	222
250	133	192	196	200	204	206	208	210	212	214	216
251	0	0	0	0	0	0	0	0	0	0	0
252	0	0	0	0	0	0	0	0	0	0	0
253	0	0	0	0	0	0	0	0	0	0	0
254	0	0	0	0	0	0	0	0	0	0	0
255	26	27	27	28	28	29	29	29	29	30	30
256	0	0	0	0	0	0	0	0	0	0	0
257	0	0	0	0	0	0	0	0	0	0	0
258	266	384	392	400	408	412	416	420	424	428	433

TABLE VII-12 (Continued)
PROJECTED TRANSIENT POPULATION
1995 - 2040

RAZ	Estimated 1990	Projected Transient Population 1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
259	1,447	1,476	1,505	1,535	1,566	1,582	1,598	1,614	1,630	1,646	1,662
260	153	156	159	163	166	168	169	171	173	174	176
261	1,585	1,617	1,649	1,682	1,716	1,733	1,750	1,768	1,785	1,803	1,821
262	2,645	3,045	3,448	3,937	4,376	4,779	5,188	5,634	6,116	6,587	7,035
263	2,717	2,842	3,461	3,875	4,247	4,588	4,936	5,313	5,722	6,121	6,501
264	0	77	111	367	597	807	1,021	1,254	1,319	1,332	1,345
265	0	0	0	0	0	0	0	0	0	0	0
266	312	332	340	404	462	515	569	627	691	753	811
267	0	0	0	0	0	0	0	0	0	0	0
268	508	518	529	539	550	556	561	567	572	578	584
269	174	178	181	185	189	190	192	194	196	198	200
270	1,374	1,402	1,430	1,459	1,488	1,503	1,518	1,533	1,548	1,564	1,579
271	1,466	1,495	1,525	1,555	1,586	1,602	1,618	1,634	1,651	1,667	1,684
272	2,588	3,052	3,257	3,780	3,855	3,894	3,933	3,972	4,012	4,052	4,092
273	0	225	566	578	589	595	601	607	613	619	625
274	97	99	101	103	105	106	107	108	110	111	112
275	3,343	3,410	4,040	4,121	4,203	4,245	4,287	4,330	4,374	4,417	4,462
276	444	453	462	471	481	485	490	495	500	505	510
277	0	90	92	94	95	96	97	98	99	100	101
278	0	0	0	0	0	0	0	0	0	0	0
279	0	0	0	0	0	0	0	0	0	0	0
280	447	475	488	582	667	745	824	910	1,003	1,094	1,180
281	0	0	0	0	0	0	0	0	0	0	0
282	0	0	0	0	0	0	0	0	0	0	0
283	0	0	0	0	0	0	0	0	0	0	0
284	0	0	0	0	0	0	0	0	0	0	0
285	10	10	11	11	11	11	11	11	11	12	12
286	182	186	189	193	197	199	201	203	205	207	209
287	4,270	4,356	4,443	4,532	4,622	4,669	4,715	4,763	4,810	4,858	4,907

TABLE VII-12 (Continued)
PROJECTED TRANSIENT POPULATION
1995 - 2040

RAZ	Estimated 1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
288	2,296	2,342	2,389	2,437	2,485	2,510	2,535	2,561	2,586	2,612	2,638
289	778	793	809	825	842	850	859	867	876	885	894
290	836	853	870	887	905	914	923	933	942	951	961
291	0	0	0	0	0	0	0	0	0	0	0
292	0	0	0	0	0	0	0	0	0	0	0
293	0	0	0	0	0	0	0	0	0	0	0
294	0	0	0	0	0	0	0	0	0	0	0
295	50	51	53	54	55	55	56	56	57	57	58
296	0	0	0	0	0	0	0	0	0	0	0
297	1,073	1,095	1,117	1,139	1,162	1,174	1,185	1,197	1,209	1,221	1,233
298	432	441	450	459	468	473	477	482	487	492	497
299	829	845	862	879	897	906	915	924	933	943	952
300	61	63	64	65	66	67	68	68	69	70	70
301	0	0	0	0	0	0	0	0	0	0	0
302	0	0	0	0	0	0	0	0	0	0	0
303	0	0	0	0	0	0	0	0	0	0	0
304	0	0	0	0	0	0	0	0	0	0	0
305	0	0	0	0	0	0	0	0	0	0	0
306	1,000	1,020	1,040	1,061	1,082	1,093	1,104	1,115	1,126	1,138	1,149
307	342	349	356	363	370	374	378	382	385	389	393
308	147	176	190	287	292	295	298	301	304	307	310
309	1,424	1,740	1,774	1,810	1,846	1,865	1,883	1,902	1,921	1,940	1,960
310	0	0	0	0	0	0	0	0	0	0	0
311	0	242	475	534	586	635	684	737	795	851	905
312	0	0	0	0	0	0	0	0	0	0	0
313	0	0	0	0	0	0	0	0	0	0	0
314	351	358	365	372	380	383	387	391	395	399	403
315	256	379	499	533	564	593	621	653	687	720	751
316	401	412	420	456	488	517	547	579	614	649	681

Projected Transient Population

TABLE VII-12 (Continued)

PROJECTED TRANSIENT POPULATION

1995 - 2040

	Estimated	Projected Transient Population									
RAZ	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040
317	58	59	60	61	62	63	64	64	65	66	66
318	0	7	234	239	244	246	249	251	254	256	259
319	0	0	0	0	0	0	0	0	0	0	0
320	0	0	0	0	0	0	0	0	0	0	0
321	0	0	0	0	0	0	0	0	0	0	0
322	0	0	0	0	0	0	0	0	0	0	0
323	0	0	0	0	0	0	0	0	0	0	0
324	0	9	238	268	295	320	346	373	403	432	460
325	0	7	10	34	56	76	96	118	141	164	186
326	0	0	0	0	0	0	0	0	0	0	0
327	0	5	7	24	39	53	67	82	99	115	130
328	0	0	0	0	0	0	0	0	0	0	0
329	0	0	0	0	0	0	0	0	0	0	0
330	0	0	0	0	0	0	0	0	0	0	0
331	0	67	69	70	72	72	73	74	74	75	76
332	0	0	0	0	0	0	0	0	0	0	0
333	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0
336	0	0	0	0	0	0	0	0	0	0	0
337	0	0	0	0	0	0	0	0	0	0	0
339	0	0	0	0	0	0	0	0	0	0	0
340	0	0	0	0	0	0	0	0	0	0	0
341	0	0	0	0	0	0	0	0	0	0	0
Total	40,792	44,185	48,142	51,513	54,104	56,167	58,263	60,513	62,730	64,860	66,866

Source:

Economic Strategies Group, 1993.

VIII. OTHER DATA REQUIREMENTS

1.0 INTRODUCTION

This working paper and its associated materials have been prepared to identify and inventory major land use projects and other development issues. Specifically, this task consists of three components:

- Planned Area Developments
- Redevelopment
- Land Costs

This report includes a description of data collection and analysis efforts, methodology used to enhance and supplement the base data, and summarizations of the data collected. Also included are appendices containing a large-scale boundary map of planned area development sites, an alphabetical listing of planned area developments, and detailed maps of redevelopment areas and supporting documentation.

2.0 PLANNED AREA DEVELOPMENTS: EXISTING, PLANNED, AND PROPOSED

Planned Area Developments are characterized by a unified overall master plan and frequently include the types of community and other non-residential space found in small towns. While typically used for residential developments, this form of unified planning is sometimes used for non-residential developments. Both types of development, residential and non-residential, have been included in this study.

Base data for planned area developments was taken from studies by Canyon Research (Planned Area Developments) and the Maricopa County Department of Planning and Development (Large-Scale Developments). Site and development plans were used, when available, to increase the level of specificity and accuracy regarding separate types of land usage within a development when such data was not present in the base studies. City planning personnel were contacted regarding unclear or conflicting information, with planning department files referred to in some instances. Since large-scale development plans tend to evolve over time, efforts were made to utilize the most current plans known.

The location and boundaries of these 171 planned and proposed developments can be found on the Appendix B metropolitan area map. The database record used to organize the information about each development is outlined in Figure VIII-1. Note that the record includes information on the total number of units by type, and the acreages. Also included are estimates of the amount of built and vacant acres by land use.

FIGURE VIII-1

Record Description
Final Development Database
MAG Planned & Proposed Developments

Field Name	Description
ID	Record identification number
LASTUP	Last record update
DRFLAG	Status Indicator
PR	Proposed
CM	Commercial
EST	Flag indicating estimated information
Y	Yes
N	No
DEVNAME	Development name
CITY	City
STR1	Major cross street 1
STR2	Major cross street 2
DEVPER	Developer name
YRSTART	Year started
OTHACRES	Other non-residential (golf course, undevelopable, etc.)
TOTACRES	Total acres
SFACRES	Single family acres
PHACRES	Patio home acres
THACRES	Townhouse acres
COACRES	Condominium acres
APACRES	Apartment acres
RESACRES	Residential acres
SFUNITTOT	Single family total units
PHUNITTOT	Patio home total units
THUNITTOT	Townhouse total units
COUNITTOT	Condominium total units
APUNITTOT	Apartment total units
RESUNITTOT	Residential total units
SFUNITBLT	Single family units built
PHUNITBLT	Patio home units built
THUNITBLT	Townhouse units built
COUNITBLT	Condominium units built
APUNITBLT	Apartment units built
RESUNITBLT	Residential units built
COMACRES	Commercial acres
OFFACRES	Office acres
INDACRES	Industrial acres
HOTACRES	Hotel acres
COIACRES	Commercial\Office\Industrial acres
COMACRESBLT	Commercial acres built

FIGURE VIII-1 (Continued)
Record Description
Final Development Database
MAG Planned & Proposed Developments

Field Name	Description
OFFACRESBLT	Office acres built
INDACRESBLT	Industrial acres built
HOTACRESBLT	Hotel acres built
PUBACRESBLT	Public acres built
COIACRESBLT	Commercial\Office\Industrial acres built
COMVAC	Commercial acres vacant
OFFVAC	Office acres vacant
INDVAC	Industrial acres vacant
HOTVAC	Hotel acres vacant
PUBVAC	Public acres vacant
COIVAC	Commercial\Office\Industrial acres vacant

Source: Economic Strategies Group, June 1993.

In instances where the base studies used marketing terms (such as casita), or used terms interchangeably (patio home and townhouse, townhouse and condominium), such properties were categorized based on building structure, density, and zoning, taking into consideration the location and character of the individual development involved. Also utilized were city staff, descriptive text about the developments, and the texts, The Language of Zoning (Michael Meshenberg, Planning Advisory Service of the American Society of Planning Officials), and The VNR Real Estate Dictionary (David Brownstone and Irene Franck). For the purposes of this study the general definitions used were:

- Single family: detached units;
- Patio home: detached units at greater density, approximately 5-7 units/acre;
- Townhouse: single family attached, with ownership of the underlying property, approximately 8-12 units/acre;
- Condominium: multifamily with ownership of the unit only;
- Apartment: multifamily without individual ownership, higher density than condominiums.

For those developments where information was not available on specific divisions of land usage by type, the information was allocated, to the extent possible, based on proportions of land use by type present in other developments of similar size and general characteristics. For developments where this method was not feasible, division of land usage by type was based on the location and characteristics of the development and estimated development intensity. In all instances where estimations were necessary consideration was also given to the development's location, both geographically and in reference to surrounding development, and the target market planned, when such information was available.

Summarized data for the 171 planned area developments included in this study is contained in the following tables:

Table VIII-1 shows the division of residential components of these developments and the number of built and unbuilt units. This table shows constructed housing units are only **16%** of the total planned. Also shown is the fact that single family detached units (single family plus patio homes) comprise **63%** of the total units planned.

Table VIII-2 shows the divisions of non-residential development and acreage which is undevelopable or set aside for open space, parks, and golf courses, and the amount of acreage currently utilized. It can be seen that development of commercial acreage lags far behind residential development.

3.0 REDEVELOPMENT

Redevelopment areas are identified by cities as being sub-standard in character or designated as a redevelopment area due to economic, geographic, or other constraints. Base information for this component was taken from interviews conducted with planning department representatives of Maricopa County and of all cities and towns within Maricopa County.

A brief description of the identified redevelopment plans is contained in Table VIII-3. The accompanying maps, found in Appendix C, show the geographic outlines of each identified redevelopment area. Following is a summarization of the redevelopment plans for those cities and towns which have such areas designated.

Town of Buckeye. The majority of the downtown area has been designated a slum and blighted area by the Town of Buckeye. The town has received CDBG funds to assist in the refurbishment and upgrading of this area. Proposed improvements include street and sidewalk modification, and residential and commercial property refurbishment.

City of Chandler. The single redevelopment area in the City of Chandler covers 1920 acres and includes the downtown commercial area. Redevelopment plans include recruitment of retail development, upgrading existing commercial frontage, use of CDBG funds for rehabilitation of single family residential properties, and private redevelopment of small, municipal properties including a 40-80 acre parcel at the southwest corner of Chandler Boulevard and Arizona Avenue. This parcel is proposed for approximately 100,000 square feet of commercial and office uses, with a "farmers market", forecast for construction between 1995 and 2000.

Town of Gilbert. A downtown redevelopment plan was adopted by the Town of Gilbert in 1991. The primary focus of the plan is the improvement and refurbishment of existing residential and commercial properties, including exterior treatment, internal servicing, and streetscaping. The town is also forming an economic development policy to encourage commercial growth in the downtown area.

City of Glendale. The designated redevelopment area surrounds and includes the downtown district. The City of Glendale is supporting public works upgrading and policy updating to promote reinvestment and redevelopment. The redevelopment policies call for mixed commercial and residential uses and currently is approximately 30 percent complete.

City of Mesa. Three forms of redevelopment are currently in place in the City of Mesa: site specific redevelopment, infill development in older neighborhoods, and the Town Center redevelopment area. The partially implemented Town Center plan has been in place for several years with the purpose of encouraging the upgrading and redevelopment of the downtown business core.

City of Peoria. A redevelopment plan for the northern area of the City of Peoria was prepared in the fall of 1992. The plan addresses zoning inconsistencies, traffic circulation, land use changes, and servicing problems. The plan proposes construction of a baseball stadium at Bell Road and 75th Avenue, the "North Valley Power Center" at Bell Road and 90th Avenue, with office, commercial, and residential uses to the south.

City of Phoenix. There are currently five redevelopment areas active within the City of Phoenix:

- **Government Mall.** This plan calls for the consolidation of land uses and the refurbishment of existing properties. Mixed use development characterizes the area north of Van Buren Street while commercial development and government facilities characterize the area south of Van Buren Street.

- **Sky Harbor Center.** This plan was adopted in 1985 and calls for the removal of slum properties and the construction of airport support uses, a "high-tech" business park, industrial and distribution uses with neighborhood services on the eastern portion of the area.

- **Camelback East.** Planned for completion by 2015, this plan is designed to encourage development of a mixed use central core with retention of single family residential uses while resolving traffic conflicts and improving public works facilities.

- **Phoenix Arts District.** This plan identifies a potential gross building area of 2.7 million square feet with 400,000 square feet of arts-related retail and community uses.

- **Phoenix Indian School.** The redevelopment of this Central Avenue property is planned for joint private and public uses but conflicting interests make timing and details uncertain.

Town of Queen Creek. CDBG funds have been approved for the financing of a sewage treatment plant and infrastructure to service the 500-600 acre area surrounding and including the existing town center. The funding, which also provides for future residential and commercial development, could be in place by 1995-2000.

City of Scottsdale. There are currently two redevelopment areas designated in the City of Scottsdale:

- **Waterfront.** This plan calls for the modification of commercial land use for waterfront-oriented development, taking advantage of the location adjacent to the Arizona Canal. The plan calls for mixed-use development with service commercial and public uses, indoor and outdoor entertainment facilities, restaurants, with pedestrian orientation and bridges. While no formal status is in place, suggested timing includes: 55,000 square feet of entertainment use and general retail, 90,000 square feet of specialty and museum retail, and 550,000 square feet of office development in place by 2005; a 300 room hotel completed between 1996-2000; 900 multifamily/ condominium units by 2000.

- **Southeast Downtown.** This partially completed plan encourages the development or refurbishment of the mixture of uses characterizing the area. Existing uses include the Civic Center and City of Scottsdale government offices, hospital and medical office space, and a newly completed major league baseball stadium. The plan is divided into eight sub-areas with completion expected in 2015-2020.

Town of Surprise. CDBG funds have been approved for the construction of a regional water and sewage treatment facility. Construction, to be completed by 1996, is expected to stimulate major development in the 700 acre area. A 60 acre parcel on the northwest corner of Dysart Road and Peoria Avenue has been designated for industrial development, pending servicing and sufficient infrastructure.

City of Tempe. There are two redevelopment areas active:

- **Downtown.** This 120 acre historical district has been in the redevelopment process for several years and is 70 percent completed. The area includes office, commercial, entertainment and restaurant uses, and residential property. Completion is expected by 2005-2010.

- **Apache Boulevard.** The City of Tempe is encouraging private commercial and industrial development with improvements including street improvement, lighting, and landscaping. Completion is expected by 2005-2010.

Town of Wickenburg. A specific plan is currently being prepared for the redevelopment of the downtown and surrounding area of 140-160 acres. Land uses include mixed residential, commercial, and public open space. Completion is expected by 2005-2010.

4.0 LAND COSTS

The final product of the Other Data Requirements task is an estimate of land costs/values for book-map areas in Maricopa County. The Assessor's Full Cash Values of Land for each parcel, from the Parcel Database developed for Task 6, were aggregated to determine the total value of the land in each book-map. This value is then divided by the total land area of each book-map, as derived from the book-map map also developed as part of the work for Task 6.

The resulting values, areas, and values-per-acre estimates for each book-map are provided in the "LAND VALUES DATABASE." This database includes one record for each of the 6,028 book-maps in Maricopa County.

A summary of the database appears in Table VIII-4.

TABLE VIII-1
Residential Acres & Units by Type
MAG Planned & Proposed Development Database

Housing Type	Acres	Total Units	Units Built	Vacant Units	% of Units Built
Single Family	134,106	247,184	54,463	192,721	22.0%
Patio Home	19,398	73,229	8,810	64,419	12.0%
Town House	10,643	56,688	8,052	48,636	14.2%
Condo	595	5,731	3,104	2,627	54.2%
Apartment	10,638	120,332	15,441	104,891	12.8%
Total	175,380	503,164	89,870	413,294	17.9%

Source: Economic Strategies Group, 1993.

TABLE VIII-2
Non-Residential Acres by Type
MAG Planned & Proposed Development Database

Land Use	Total Acres	Acres Built	Acres Vacant	% of Acres Built
Commercial	15,208	723	14,485	4.8%
Office	6,504	495	6,009	7.6%
Industrial	14,996	257	14,739	1.7%
Hotel	3,596	277	3,319	7.7%
Public	3,624	412	3,212	11.4%
Total	43,928	2,164	41,764	4.9%
Undevelopable/ Open Space	34,958			
Total	78,886	2,164	41,764	2.7%

Source: Economic Strategies Group, 1993.

TABLE VIII-3

Redevelopment Activity
Maricopa County

Municipality	Map Number	Redevelopment	Estimated Configuration
Avondale		None	
Buckeye	200	CBDG funds for area along Monroe St. one block north and south from 1st St. to 9th St., TAZ 984. Street & sidewalk improvements. Some small residential & commercial refurbishments within the town.	
Carefree		None	
Cave Creek		None	
Chandler	201	Downtown commercial area from Hartford St. and Ray Rd. to Pecos Rd. and McQueen Rd., TAZ 1172, 1173, 1195 &1196. Upgrading & development to include 100,000 sq. ft. mixed use commercial development at Arizona Ave. and Chandler Blvd. Completion in 1995-2000 time period.	1,920 acres Mixed use
El Mirage		None	
Fountain Hills		None	
Gila Bend		None	
Gilbert	202	Downtown area from Western Canal to Warner Rd. along either side of Gilbert Rd., TAZ 1107, 1108, 1127 & 1128. Mixed use spot development & streetscape refurbishment with CBD grants.	480 acres Mixed use

TABLE VIII-3 (Continued)

Redevelopment Activity
Maricopa County

Municipality	Map Number	Redevelopment	Estimated Configuration
Glendale	203	Downtown area from Orangewood Ave. to Maryland and 51st to 63rd Aves., TAZ 370, 371, 372, 400, 401 & 402. Mixed use residential and retail uses. Also, commercial office uses. Recevelopment is 30 percent complete.	960 acres Mixed use
Guadalupe		None	
Litchfield Park		None	
Mesa	204	Town Center area for refurbishment of existing residential uses and small scale redevelopment. Located from E. of Country Club Dr. to W. of Mesa Dr. and N. of University Dr. to S. of Broadway Rd., TAZ 847-851, 898-905 & 964-966. Future uses to include retail, commercial and office space.	830 acres Mixed use
Paradise Valley		None	
Peoria	205	North Peoria from Bell Rd. to Thunderbird Rd. and 91st Ave. to Glendale/Peoria border, TAZ 182, 183 & 208. Refurbishment and public works of mixed use areas. Also, construction of baseball stadium for spring training and other seasonal uses.	2,200 acres Mixed use
Phoenix	206	Government Mall between Fillmore and Harrison and 7th Ave. and 19th Ave. to Grand Ave., TAZ 686, 745 & 748. Government offices south of Van Buren. Local retail along Van Buren with residential improvement areas to the north.	460 acres Mixed use
	126	Sky Harbor redevelopment area at 16-24th Sts. and Jefferson to S. P. Railway, TAZ 763 & 765. Removal of slum property and redevelopment for industrial and commercial in commerce park areas.	960 acres Ind., Comm., Off. & Open uses

TABLE VIII-3 (Continued)
Redevelopment Activity
Maricopa County

Municipality	Map Number	Redevelopment	Estimated Configuration
Phoenix	207	East Camelback redevelopment area located from 16th St. to 28th St. and Colter St. to Campbell Ave., TAZ 458, 460, 461, 499, 500 & 502. Mixed use central core and retention of single family while resolving traffic conflicts and improving public works and use areas. Completion by 2015.	720 acres Mixed use
	208	Phoenix Arts District along Central Ave. from Oak to Moreland, TAZ 622, 623 & 625 for development of 2.7 million SF of offices and .4 million SF of arts related retail and commercial use.	60 acres Comm. & Off. uses
	209	Indian School area on north east corner of Indian School Rd. and Central Ave., TAZ 496, For reuse as office, commercial & open space, mixed use residential and retail on 108 acre site. Timing is unknown.	108 acres Mixed use
Queen Creek	210	Old urban area located at Ocotillo Rd. and Ellsworth Rd., TAZ 1240, 1241, 1254 & 1255, subject of CBD grants for servicing, 1995-2000. Future uses to include residential and local commercial/retail as part of large scale development of adjacent land areas.	500-600 acres Mixed use
Scottsdale	211	Waterfront area along canal banks from 88th St. & Indian School to Highland, TAZ 516, 517 & 518. 90 acres to be reused for 55,000 sq. ft. entertainment and retail, 300 room hotel, .5 million sq. ft. office, 500-800 residential units. Timing of plan phased out over 1996-2005.	90 acres Mixed use
	212	SE Downtown area from Miller Rd. to Scottsdale Rd. and Indian School Rd. to Earl Rd., TAZ 578. Mixed uses are of civic and government offices, hospitals and medical related offices and clinics, recreation stadium and residential. Buildout planned for 2015-2020.	160 acres Mixed use

TABLE VIII-3 (Continued)
Redevelopment Activity
Maricopa County

Municipality	Map Number	Redevelopment	Estimated Configuration
Surprise	213	Old town Surprise is in redevelopment, area from Bell Rd. and Dysart Rd. to Greenway Rd. and El Mirage Rd., TAZ 178. New servicing system to be installed by 1996, expected to stimulate major growth in the planning area.	700 acres Mixed use
Tempe	214	Downtown area from 1st St. and S.P. Railway to University Dr. and College Ave., TAZ 837, 838 & 839. 70 percent complete. Reuse for refurbished retail, new office and commercial space including mixed use development for residential, retail and office uses. Completion expected by 2005-2010.	120 acres Mixed use
		Apache Blvd area from Price Rd. to Mill Ave., TAZ 881-887. Mixed use commercial and industrial area. Streetscape and public works to be limited. Redevelopment by private concerns to be encouraged. Timing for completion by 2005-2010.	
Tolleson		None	
Wickenburg	216	Downtown area from Adams St. and Cochise St. to Sol's wash and the Hassayampa river, RAZ 201. 140-160 acres for development of residential (MF & SF), commercial, retail and open space. Timing in 2005-2010 time period.	140-160 acres Mixed use
Maricopa County		None. Concern as to scope of development plans of the outlying municipalities, especially in areas of environmental sensitivity, upper Sonoran Slopes area in north Phoenix and Peoria.	

Source: Economic Strategies Group Interviews, 1993.

TABLE VIII-4

LAND COSTS BY BOOK MAP
BASED ON ASSESSOR'S FULL CASH VALUE OF LAND

Description	Book-Map	Cost Per Acre
Average	---	$10,782
Minimum	506-53	$0.07
Maximum	164-69	$937,973
Total FCV	---	$32.4 Billion
Total Land Area	---	4,700 square miles

APPENIX A

PARCEL DATABASE

DATA DICTIONARY

PARCEL DATABASE DATA DICTIONARY

Field Name: **ACRES**
Field Type: real
Field Width: 10
Field Format: F10.2
Source: MetroScan or Fractional Acreage Database or Other

Description

The acres field shows the size of parcel in acres. This information was obtained from assessor's information obtain through MetroScan, from a database of Fractional Acreages stored in the original Parcel Database, or from some other source stored in the original Parcel Database.

Field Name: **ACRESFLG**
Field Type: character
Field Size: 2
Source: MetroScan or Other

Description

The acres flag field indicates the source of the acres data contained in the ACRES field. The acres flag code is listed below:

Code	Description
MS	MetroScan
MW	Other — Originally done by Mountain West
Blank	No acreage data available

Field Name: **ADDRESS**
Field Type: character
Field Size: 34
Source: MetroScan or original MAG Parcel Database

Description

Site addresses included in the ADDRESS field are converted into a standard format. The standard site address is composed of the street number, street direction, street name, and street suffix. ADDRESS was always derived from MetroScan unless blank, and an address was provided on the old parcel database.

Field Name: **ASSPCT**
Field Type: real
Field Width: 8
Field Size: F8.2
Source: MetroScan

Description

This field contains the assessment ratio applied to land and building values to calculate assessed value. Assessment ratios vary by land use type, the most common are as follows:

Rate	Land Use
10%	Residential Property
16%	Vacant Land
25%	Commercial Property

Field Name: **BATHS**
Field Type: character
Field Size: 2
Source: MetroScan

Description

This field shows the number of bath fixtures with a total of 3 fixtures per bathroom: toilet, sink, and bath. A property with 2 full bathrooms would contain 6 in the field.

Field Name: **BLDGFCV**
Field Type: real
Field Width: 15
Field Size: F15.2
Source: MetroScan

Description

This field contains the full cash value of any improvements on the parcel. It is expressed in dollars.

Field Name: **CITYCODE**
Field Type: character
Field Size: 2
Source: Tax Area Code

Description

The city code consists of 2 characters and was assigned based on tax area codes. Thus, this code would indicate the jurisdiction in which a parcel is located, which may be different than its mailing address city. The city codes are listed below.

Code Description

Code	Description	Code	Description	Code	Description
AV	Avondale	GI	Gilbert	QC	Queen Creek
BU	Buckeye	GL	Glendale	SC	Scottsdale
CA	Carefree	GO	Goodyear	SP	Surprise
CC	Cave Creek	GU	Guadalupe	TE	Tempe
CH	Chandler	LP	Litchfield Park	TO	Tolleson
CO	County	ME	Mesa	WI	Wickenburg
EL	El Mirage	PV	Paradise Valley	YO	Youngtown
FH	Fountain Hills	PE	Peoria		
GB	Gila Bend	PH	Phoenix		

Field Name: **CITY**
Field Type: character
Field Size: 15
Source: MetroScan or original MAG Parcel Database

Description

City is the mail city associated with the mailing address of the parcel, if given. This can differ from "City Code" (previous page) when jurisdictional and post office designation for a jurisdiction are different.

City

City		
Avondale	Gilbert	Phoenix
Buckeye	Glendale	Queen Creek
Carefree	Goodyear	Scottsdale
Cave Creek	Guadalupe	Surprise
Chandler	Litchfield Park	Tempe
El Mirage	Mesa	Tolleson
Fountain Hills	Paradise Valley	Wickenburg
Gila Bend	Peoria	Youngtown

Field Name: **CENBLK**
Field Type: character
Field Size: 4
Source: MetroScan

Description

This is the Census Block number in which the parcel is located. This number is only unique within a particular Census Tract. This information is typically only filled for residential parcels with site addresses.

Field Name: **CENTRCT**
Field Type: character
Field Size: 6
Source: MetroScan

Description

This is the Census Tract number in which the parcel is located. This information is typically only filled for residential parcels with site addresses.

Field Name: **CONDITION**
Field Type: character
Field Size: 15
Source: MetroScan

Description

This field describes how the condition of the improvement on the parcel compares with the norm for improvements of the same type and grade. Common descriptions used include:

Condition
Below Average
Average
Above Average

Field Name: **EXAMT**
Field Type: Real
Field Width: 15
Field Format: F15.2
Source: MetroScan

Description

This field contains the portion of full cash value exempted from property tax.

Field Name: **EXCODE**
   Field Type: character
   Field Size: 15
     Source: MetroScan

Description

This field describes the nature of the property tax exemption, if any. Common exemptions include:

> <u>Exemptions</u>
> Historical
> Veteran

Field Name: **LCIC**
   Field Type: character
   Field Size: 4
     Source: MetroScan

Description

The LCIC (land class, improvement class) code is also known as the property use code. This code indicates the predominant use of the parcel and information about the type of structure (if any) that exists on the parcel. A very brief outline of the LCIC code system is shown below.

<u>LCIC</u>	<u>Property Use</u>
0000-0085	Vacant Land
0100-0198	Single Family Residential
0300-0380	Multiple Residential
0400-0600	Hotel-Motel-Resort
0700-0770	Condominiums
0800-0870	Mobile Homes
0900-0950	Miscellaneous and Salvage
1000-2900	Commercial Property
3000-3740	Industrial Property
4000-4910	Ranch Property
5100-5900	Public Utilities
6100-6900	Natural Resources
8500-8900	Special Use Property
9200-9860	General Service Use

The first two numbers in the code indicate the basic classification of vacant, residential, commercial, industrial, etc. The last two numbers of the code identify additional characteristics and major subcategories of property uses. A complete listing of code can be obtained from the County Assessor's Office.

Field Name: **LANDFCV**
Field Type: real
Field Width: 15
Field Size: F15.2
Source: MetroScan

Description

This field contains the full cash value of the land in the parcel. It is expressed in dollars.

Field Name: **MAGLU**
Field Type: integer
Field Size: 2
Source: MetroScan

Description

The MAG land use code is a one or two number code used to indicate the use of the parcel. This code is similar to but much more general than the LCIC code. A description of the codes are listed below. the nature of the property tax exemption, if any. Exemptions include:

Code	Description	Code	Description
	Residential		Medical Services
01	Single Family	14	Nursing Homes
02	Townhouse	15	Hospitals and Clinics
03	Multifamily	16	Medical Offices
04	Mobile Home		
			Industrial
	Hotel/Motel	17	Manufacturing
05	Hotel/Motel	18	Warehouse
06	Resorts	19	Public Utilities
	Commercial (Retail)		Public/Quasi Public
07	Neighborhood Retail	20	Schools
08	Community Retail	21	Government
09	Regional Retail	22	Churches
10	Strip Commercial		
11	Auto Service/Sales		Vacant/Low Density
		23	Vacant Developable
	Office	24	Vacant Non-Developable
12	Small Offices	25	Golf Courses
13	Large Offices	26	Mining
		27	Under Construction
		28	Other Miscellaneous

Field Name: **PAGEGRID**
Field Type: character
Field Size: 8
Source: MetroScan

Description

PageGrid is reference to a page in the mapping system used by MetroScan. It is usually only filled in cases were address and/or Census tract and block are also filled in.

Field Name: **PARCEL**
Field Type: character
Field Size: 9
Source: MetroScan

Description

The 9 character parcel field is comprised of 4 subsets of data:
1) assessor's book number   3 characters
2) assessor's map number   2 characters
3) assessor's parcel number   3 characters
4) assessor's split   1 character (optional)

The PARCEL is a unique identification number for a property and can be used to locate a property on the assessor's maps. An example PARCEL number is:

10107024A
(book 101, map 07, parcel 024, split A)

Since the split portion of the PARCEL is optional the last space of this field may be blank.

Field Name: **QUALITY**
Field Type: character
Field Size: 15
Source: MetroScan

Description

This field, derived from the Residential Master File, indicates the grade of the materials and quality of workmanship of a parcel improvements. The QUALITY descriptions are as follows:

Quality   minimum
            fair
            good
            excellent

Field Name: **ROOMS**
Field Type: integer
Field Size: 6
Source: MetroScan

Description

This field, derived from the Residential Master File, indicates the number of rooms in a residential structure. It includes only major living areas such as the kitchen, living room, dining room, and bedrooms. Bathrooms, storage rooms, garages, and rooms not separated by a wall are not included in the room count.

Field Name: **SALEDATE**
Field Type: character
Field Size: 6
Source: MetroScan

Description

The sales date corresponds to the filing date of the deed. The format for the sales date is year-month-day, for example, November 16, 1993 would appear as 931116.

Field Name: **SALEPRICE**
Field Type: real
Field Width: 15
Field Size: F15.2
Source: MetroScan

Description

The sales price is included for the most recent sale. The sales price originates from the affidavit of value. Occasionally, the sale will not be an "arms length" transaction and therefore will not represent the true market value of the property. The sales price is stored as a real number and is in current dollars as of the SALEDATE.

Field Name: **SQFTEARLY**
Field Type: real
Field Width: 10
Field Size: F10.0
Source: MetroScan

Description

This field indicates the square feet of the improvements from the earliest construction year for the parcel. See YEAREARLY for the corresponding year of construction.

Field Name: **SQFTLATE**
Field Type: real
Field Width: 10
Field Size: F10.0
Source: MetroScan

Description

This field indicates the square feet of the improvements from the latest construction year for the parcel. See YEARLATE for the corresponding year of construction.

Field Name: **SQFTMOST**
Field Type: real
Field Width: 10
Field Size: F10.0
Source: MetroScan

Description

This field indicates the square feet of the improvements from the year with the most construction on the parcel. See YEARMOST for the corresponding year of construction.

Field Name: **SQFTTOTAL**
Field Type: real
Field Width: 10
Field Size: F10.0
Source: MetroScan

Description

This field indicates the total square feet of the improvements on the parcel.

Field Name: **STORIES**
Field Type: integer
Field Width: 6
Field Size: I2
Source: MetroScan

Description

The number of stories is designated for residential parcels using the numeric code listed below:

Story Code	Description
10	1 story
15	1 1/2 stories
20	2 story
25	2 1/2 stories
30	3 story
40	4 story

Field Name: **TAXAREA**
Field Type: character
Field Size: 6
Source: MetroScan

Description

The tax area code indicates the school district, city, and improvement district within which the parcel is located. The tax area code identifies the tax rates applicable to the assessed value of the parcel. The first two characters of TAXAREA are the school district, and the last two characters are the city/special district. Tax code are currently numbers from 0000 through 9890. All codes currently contain four number so that the effective field width is 4 characters. However, there is discussion of adding two additional characters to distinguish between city and special districts, thus a field width of 6 characters is allocated.

Field Name: **TAZ 1272**
Field Type: character
Field Size: 4
Source: Mountain West / MAG

Description

TAZ 1272 shows the TAZ (Traffic Analysis Zone) within which the parcel is located, according to MAG's 1272 zone system used from approximately 1988 through 1990. These number were transferred to the updated Parcel Database of the purposes of historical analysis. The TAZ's were assigned by a computer program and may not be accurate in all cases.

Field Name: **TAZ90**
Field Type: character
Field Size: 4
Source: MAG / GIS Southwest

Description

TAZ90 shows the TAZ (Traffic Analysis Zone) within which the parcel is located, according to MAG's current (December, 1993) zone system. The TAZ's are numbered from 1 to 1390. The TAZ's were assigned by a computer program, using the x,y coordinates of the parcel derived from addresses and book-map centroids and may not be accurate in all cases. However, the accuracy of these TAZ numbers should be better than those found in TAZ 1272.

Field Name: **TOTUNITS**
Field Type: integer
Field Size: 6
Source: MetroScan

Description

TOTUNITS contains the total number of housing units located on each residential parcel.

Field Name: **X_IN**
Field Type: real
Field Width: 10
Field Format: F10.2
Source: MAG / Mountain West

Description

X_IN contains the x-coordinate of the parcel as assigned in the development of the original Parcel Database. These coordinates were assigned by the LandTrak system, and are expressed in Western State Plane Coordinates. This information was carried over to the updated Parcel Database because it can be converted and compared with new x-coordinates assigned by Arc/Info (X_COORD).

Field Name: **X_COORD**
Field Type: real
Field Width: 10
Field Format: F10.2
Source: MAG / GIS Southwest

Description

X_COORD contains the x-coordinate of the parcel as assigned in the process of updating of the Parcel Database. These coordinates were assigned either by address matching using MAG's "MAGNET" street database, or using the digitized centroid of the parcel's Book-Map. The XYFLAG field indicates the method used for that particular parcel. X_COORD was assigned using Arc/Info, and is expressed in Arizona Central State Plane Coordinates.

Field Name: **XYFLAG**
Field Type: character
Field Size: 2
Source: MAG / GIS Southwest / ESG

Description

The XYFLAG indicates the way in which the X and Y coordinates contained in
X_COORD and Y_COORD were assigned in updating the Parcel Database. All XY
coordinates were assigned one of two ways. About 50 percent were addressed matched
against MAG's "MAGNET" street network, and have an XYFLAG of "AD". The other
half were assigned using the centroid of the Book-Map the parcel is contained within.
These XYFLAG on these parcels is "BM".

Field Name: **Y_IN**
Field Type: real
Field Width: 10
Field Format: F10.2
Source: MAG / Mountain West

Description

Y_IN contains the y-coordinate of the parcel as assigned in the development of the
original Parcel Database. These coordinates were assigned by the LandTrak system, and
are expressed in Western State Plane Coordinates. This information was carried over to
the updated Parcel Database because it can be converted and compared with new y-
coordinates assigned by Arc/Info (Y_COORD).

Field Name: **Y_COORD**
Field Type: real
Field Width: 10
Field Format: F10.2
Source: MAG / GIS Southwest

Description

Y_COORD contains the y-coordinate of the parcel as assigned in the process of
updating of the Parcel Database. These coordinates were assigned either by address
matching using MAG's "MAGNET" street database, or using the digitized centroid of the
parcel's Book-Map. The XYFLAG field indicates the method used for that particular
parcel. Y_COORD was assigned using Arc/Info, and is expressed in Arizona Central
State Plane Coordinates.

Field Name: **YEAREARLY**
Field Type: integer
Field Size: 4
Source: MetroScan

Description

This field indicates the year that the first construction occurred on the parcel. It is expressed as four digits, for example, 1983. See SQFTEARLY for the square footage constructed in this year.

Field Name: **YEARLATE**
Field Type: integer
Field Size: 4
Source: MetroScan

Description

This field indicates the year that the last construction occurred on the parcel. It is expressed as four digits, for example, 1983. See SQFTLATE for the square footage constructed in this year.

Field Name: **YEARMOST**
Field Type: integer
Field Size: 4
Source: MetroScan

Description

This field indicates the year that most of the construction occurred on the parcel. It is expressed as four digits, for example, 1983. See SQFTMOST for the square footage constructed in this year.

Field Name: **ZIPCODE**
Field Type: character
Field Size: 6
Source: MetroScan

Description

This field indicates the ZIPCODE that the parcel is within. This is generally only filled in when a valid site address was available.

APPENIX B

UNDER CONSTRUCTION, PLANNED & PROPOSED LARGE SCALE DEVELOPMENTS IN MARICOPA COUNTY

Planned Developments

CITY	ID	Development Name	Total Acres
Avondale			
	131	Avondale Dev. Master Plan	667
	68	Garden Lakes	720
			1,387
Buckeye			
	161	Sun Valley	48,000
			48,000
Chandler			
	2	Alma School & Ray	64
	4	Andersen Springs	441
	5	Carillo Ranch	64
	6	Chandler Ranch	92
	8	Cresent Village	79
	84	D'Arcy Ranch	75
	12	Gila Springs	306
	168	Hearthstone	233
	122	Ironwood Estates	164
	18	Maggio Ranch	171
	19	Mission Park Ranch	156
	83	Monte Vista	74
	23	Ocotillo	2,720
	81	Park Promenade	105
	24	Pecos Ranch	654
	25	Provinces, The	508
	80	Pylman Ranch	113
	28	Silver Creek Center	276
	29	Springs, The	184
	82	Sun Rise	41
	32	Sunbird Golf Resort	652
	34	Superstition Ranch	192
	38	Tradition, The (/Tradition East)	318
	39	Twelve Oaks	348
			8,028
County			
	132	Belmont	20,805
	134	Carefree West	946
	144	Chandler Heights	1,300
	159	Clearwater Farms	1,920
	119	Desert Tree	1,553
	160	Goldfield	4,800
	141	Linda Vista	437

CITY	ID	Development Name	Total Acres
	146	Litchfield Commerce Center	662
	153	Rio Verde	1,004
	142	Sossaman Estates	882
	155	Spencer Development	1,184
	156	Spur Cross Ranch	2,154
	157	Tonto Hills	453
	152	Tonto Verde	675
	151	Verde River	491
	162	Whispering Ranch	18,800
			58,066
Fountain Hills			
	166	Los Altos Hills	502
	99	The Summit East	718
	98	Westridge	384
			1,604
Gilbert			
	92	Circle G Meadows V	121
	87	Conner Ranch	320
	7	Continental Park Village	156
	91	Crossroads	136
	93	Dodick Properties	131
	88	El Dorado Lakes	432
	85	Gilbert Commons	153
	13	Islands, The	795
	14	Lago Estancia	240
	17	Madera Parc	121
	90	Settlers Point	642
	89	Ski Springs	350
	128	Sonoma Ranch	154
	30	Stonebridge Lakes	114
	86	Superstition Subdivision	87
	36	Towne Meadows	221
	37	Township, The	91
	40	Val Vista Lakes	802
	42	Wind Drift	142
			5,206
Glendale			
	64	Arrowhead Ranch	4,480
	124	Glen Harbor Business Park	331
	78	Hillcrest Ranch	480
	70	Marshall Ranch	170
			5,461
Glendale/Peoria			
	147	Arrowhead Regional Mall	796

CITY	ID	Development Name	Total Acres
			796
Goodyear			
	130	Airport Commercenter	430
	136	Estrella Aerospace Center	418
	137	Estrella Distribution Center	228
	67	Estrella Phase 1	3,385
	135	Estrella Phase II	5,505
	138	Estrella Vista	280
	139	Goodyear 1000	996
	140	Goodyear Gateway	239
	118	Hidden Valley	6,000
	145	Litchfield Master Plan	6,509
	121	Palm Valley Phase One	1,475
	72	Pebble Creek Golf Resort	2,200
			27,665
Litchfield Park			
	170	Litchfield Greens	497
	171	Rancho La Loma	355
			852
Mesa			
	3	Alta Mesa	914
	95	Augusta Ranch (The Crossing)	965
	94	Boulder Mountain Highlands	324
	167	Camelot Country Club	372
	127	Dana Ranch	136
	9	Falcon Ridge	1,835
	11	Fountain of the Sun	582
	16	Leisure World	1,120
	96	Mesa Highlands	760
	20	Moondance	220
	26	Red Mountain Ranch	829
	27	Ridgeview	449
	97	Signal Butte Ranch	713
	33	Sunland Village East	582
	35	Superstition Springs	1,619
	165	Viewpoint I and II	220
			11,640
Peoria			
	133	Calderwood Butte	290
	65	Country Meadows	659
	66	Desert Harbor	477
	75	Ventana Lakes	484
	77	Westbrook Village	1,326

CITY	ID	Development Name	Total Acres
			3,236
Phoenix			
	129	40th St. and McDowell	236
	1	Ahwatukee	2,215
	63	Amberlea	400
	116	Camelback Ranch	584
	117	DC Ranch	429
	103	Desert Ridge	5,723
	10	Foothills, The	4,066
	101	Herberger/Woodbine Property	713
	15	Lakewood	769
	21	Mountain Park Ranch	2,647
	22	Mountainside	458
	71	North Canyon Ranch	480
	164	Phoenix Northgate Business Ce	300
	126	Sky Harbor Center	67
	154	South Mountain Foothills	201
	115	Stetson Hills	2,230
	59	Tatum Ranch	1,411
	107	Tatum Ridge	424
	76	Villa De Paz	618
			23,970
Queen Creek			
	143	Rancho Del Rey	560
			560
Scottsdale			
	113	104 th & Bell	800
	43	Ancala Country Club	290
	110	Ancala II (1st Plan)	284
	172	Bent Tree Desert Estates	80
	44	Boulders, The	984
	173	Carriage Trails	90
	106	Corrigan/Marley Property	8,388
	45	Desert Highlands	850
	46	Desert Hills	65
	47	Desert Mountain	8,129
	108	Desert Ranch	640
	174	Desert Rose	138
	102	Eagle Ridge Area	405
	48	Gainey Ranch	642
	49	Ironwood Village	285
	175	Lone Mountain Vista	160
	176	Los Portones	136
	50	McCormick Ranch	2,925

CITY	ID	Development Name	Total Acres
	100	McDowell Mountain Ranch	3,198
	51	Montana Ranch	100
	177	Morning Vista Estates	90
	178	Northsight	160
	163	Pinnacle Peak Vistas	345
	53	Rio Montana	150
	112	Saint Andrews Club	290
	179	Sandbloom	106
	104	Scottsdale Core North Area	2,359
	105	Scottsdale Core South Area	1,299
	54	Scottsdale Horizon	276
	55	Scottsdale Mountain Estates	1,427
	180	Scottsdale Mountain View Park	230
	150	Scottsdale National	275
	181	Scottsdale Northwest/Adobe Ra	435
	52	Scottsdale Princess/Eagle PCD	174
	56	Scottsdale Ranch	1,119
	182	Shea/Scottsdale	170
	183	Sienna Oaks Estates	160
	149	Sincuidados	560
	57	Sonoran Heights	120
	184	Sonoran Highlands	160
	111	Sonoran Hills	296
	185	State	92
	58	Stonegate	384
	109	Terravita	936
	60	Troon North	1,683
	62	Troon Ridge Estates	638
	61	Troon Village	1,930
	186	Vistana	131
			44,584
Sun City West			
	73	Sun City West	6,575
			6,575
Sun Lakes			
	31	Sun Lakes	3,322
			3,322
Surprise			
	69	Kingswood Parke Phase 1	353
	74	Sun Village	335
	120	Waddell Farms	568
			1,256
Tempe			
	123	ASU Research Park	323

CITY	ID	Development Name	Total Acres
	79	Oasis at Anozira	127
	125	Papago Park Center	472
	169	Rio Salado Project	0
	41	Warner Ranch	656
			1,578
Wickenburg			
	148	Rancho Tortuga	484
			484
	Grand Total :		**254,270**

APPENIX C

REDEVELOPMENT "FOOTPRINTS"